# VALE DISTRICT
# NORMAL FIRE EMERGENCY STABILIZATION AND REHABILITATION PLAN (NFESRP) ENVIRONMENTAL ASSESSMENT

United States Department of the Interior Bureau of Land Management Vale District, Oregon

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# I. INTRODUCTION

The Vale District Office (VDO) encompasses over 5 million acres of public land in eastern Oregon. On the Vale District, wildfire has burned 1.284 million acres since 1980, a yearly average of 53,400 acres. Since 1994, 41 Emergency Stabilization and/or Rehabilitation (ESR) plans, covering over 400,000 acres were prepared by the district and funded for various stabilization and rehabilitation activities. The district has historically had a significant ESR workload. Preparation of a Normal Fire Emergency Stabilization and Rehabilitation Plan (NFESRP) for ESR would provide program consistency and streamline preparation and implementation of Emergency Stabilization and Rehabilitation Plans.

## A. PURPOSE AND NEED

The purpose of a NFESRP is to streamline the Emergency Stabilization and/or Rehabilitation plans, actions, and procedures to facilitate orderly and timely on-the-ground treatments that are consistent with the urgent need for wildland fire emergency stabilization and rehabilitation treatments. The NFESRP is a programmatic document analyzed in an Environmental Assessment (EA) that was developed for the Vale District, and contains a description of ESR treatments that would be implemented under normal conditions in the event of a wildland fire and documentation of the potential treatment impacts. A NFESRP anticipates typical post-fire conditions and is used to develop site-specific ESR plans. Emergency Stabilization actions are initiated within one year of a fire to stabilize and prevent unacceptable degradation of natural and cultural resources; minimize threats to life or property resulting from the effects of a fire; and repair/replace/construct physical improvements necessary to prevent degradation of land or resources. Rehabilitation actions are taken within three years of a fire to repair or improve lands unlikely to recover to a management-approved condition, and repair or replace minor facilities damaged by fire. Emergency Stabilization treatments, including seeding and erosion control structures that fail due to natural factors such as drought or flooding may be considered for a treatment for up to three years after a fire. Treatments beyond three years are outside the scope of a NFESRP, cannot be funded under the ESR program, and would require other program funding to implement. Recent ESR program policy and guidance changes, and current resource concerns are the impetus for preparing a NFESRP. A programmatic EA for ESR reduces the repetitive preparation of individual EAs, saving time and costs.

The NFESRP and EA would cover lands administered by the Vale District (Figure 1).

**General Setting**

The VDO manages approximately 5,333,000 acres of public land, primarily in southeastern Oregon with a small amount of public land in northeastern Oregon and southwestern Washington.

The District encompasses a variety of natural landscapes that differ in elevation and precipitation. Elevation ranges from an average low of approximately 2,200 feet on the Snake River to more than 8,000 feet in the Oregon Canyon Mountains. Average annual precipitation varies widely from 8 inches or less in the Snake River plain to 22 inches or more at higher elevations. The majority of precipitation falls during the winter and spring months. Mean temperatures vary from 15°F in January to 95°F in July. Temperature extremes of -20°F to greater than 100°F occur for short periods.

### B. CONFORMANCE WITH LAND USE PLANS AND POLICY DOCUMENTS

All ESR practices discussed in this NFESRP EA are applicable to the Vale District and are consistent with the following plan and policy documents:

- 2002 Southeastern Oregon Resource Management Plan (RMP)
- 1989 Baker RMP
- 1997 Standards for Rangeland Health and Guidelines for Grazing Management
- Burn Area Emergency Stabilization and Rehabilitation Handbook (USDA and USDI 2002b)

## II. PROPOSED ACTION AND ALTERNATIVES

### A. ALTERNATIVES CONSIDERED BUT NOT ANALYZED IN DETAIL

A no treatment alternative was considered. Under this alternative no ESR treatments would be implemented on the district. This alternative would leave all wildland fire burn areas untreated regardless of need, national policy and guidance, LUP objectives, and BLM priorities. This alternative was found to be inconsistent with Bureau policy and land use plan direction and was dropped from further consideration in this EA. Individual burn areas will be assessed as outlined below to determine if treatments are necessary consistent with policy and land use plan direction.

### B. NO ACTION ALTERNATIVE

This section describes the no action alternative. This alternative is described in terms of how it differs from the proposed action. Standard procedures, land use plan conformance and management actions are the same as the Proposed Action. Protective measures such as grazing closures, seeding, fencing, weed control, erosion control structures, chaining, or any other treatment listed in the Proposed Action would be considered but the common descriptive treatment and design features information would not be utilized. Under this alternative this programmatic EA would not be utilized and separate EAs would be prepared for each Emergency Stabilization Plan (ESP) or Rehabilitation Plan (RP).

## C. PROPOSED ACTION

The Proposed Action is a NFESRP for public lands in the Vale District BLM. The Proposed Action describes typical stabilization and rehabilitation treatments and provides guidance that would be used to develop site-specific treatment plans immediately following a wildfire. Under the Proposed Action, the BLM would use the NFESRP to prepare site-specific treatment plans to respond to typical post-fire conditions that occur in the vegetation types within the District. A fire that results in conditions beyond the scope described in the Proposed Action, and requires non-routine treatments or may affect a species listed under the Endangered Species Act (ESA) would involve the preparation of an additional NEPA analysis, and may require subsequent ESA Section 7 consultation. Having a NFESRP that anticipates the typical post-fire condition in place will assist the BLM in providing timely and cost-effective implementation of post-wildfire treatments.

**Emergency Stabilization Plan and Rehabilitation Plan Development**
After a wildland fire occurs, as needed an Emergency Stabilization Plan (ESP) and/or Rehabilitation Plan (RP) is prepared by an interdisciplinary team to mitigate the adverse affects of wildland fire on public lands. The ESP and RP are separate plans with distinct treatments and activities. The ESP and RP describe the site-specific ESR actions to be taken.

The site specific ESP and/or RP would be tiered to the NFESRP and require a Documentation of Land Use Plan Conformance and Documentation of National Environmental Policy Act Adequacy (DNA). This review process allows the Bureau of Land Management (BLM) to consider site-specific proposed actions on a previous NEPA document. A decision record would then be written based on the site specific ESP and/or RP. A discovery of a new circumstance may require the BLM to develop a new EA to analyze the impacts of the circumstance that caused the change.

**Emergency Stabilization Plan (ESP):** Emergency Stabilization actions are intended to: 1) stabilize and prevent unacceptable degradation to natural and cultural resources, 2) minimize threats to life or property resulting from the effects of a wildland fire, and 3) repair/replace/construct physical improvements necessary to prevent degradation of land or resources. Emergency Stabilization protection priorities are: 1) human life and safety, 2) property, and 3) unique or critical biological/cultural resources. ESP actions must be implemented and completed within one year after control of a wildland fire.

**Rehabilitation Plan (RP):** Rehabilitation actions are non-emergency actions that are undertaken within three years of control of a wildland fire to repair or improve fire-damaged lands unlikely to recover naturally to a management-approved condition, or to repair or replace minor facilities damaged by fire. Rehabilitation priorities are to repair or improve lands damaged directly by a wildland fire and restore or establish healthy, stable ecosystems in the burned area.

The ESP and RP may be prepared at the same time. However, they must be submitted for approval and funding separately in accordance with agency approval and funding policies. An ESP must be submitted, approved, and funded soon after control of the fire due to the urgent need to implement stabilization treatments. Rehabilitation plans have less stringent time requirements due to the non-emergency nature of rehabilitation actions.

The proposed action includes treatments that are normally implemented within the District. The description of the proposed action is organized by treatment type (Emergency Stabilization or Rehabilitation) and includes criteria based on when and why the treatment would be used and design features that would apply to the treatment. Also included in the proposed action are criteria to protect sensitive resources that would be implemented when applicable, and guidelines for monitoring. Treatments are discussed separately but could be implemented in conjunction with other treatments depending on site-specific stabilization and rehabilitation needs.

ESR would be initiated in areas that meet one or more of the following criteria:

- Areas where the soil is susceptible to accelerated erosion either because of soil characteristics, steep topography, or recurrent high winds.
- Areas where perennial grasses, shrubs, and forbs have been depleted and cannot reasonably be expected to provide soil and watershed protection within two years after a wildland fire.
- Areas where noxious weeds or exotic annual grasses may readily invade and become established following a wildland fire.
- Areas that contain crucial habitat for wildlife and/or Special Status Species (SSS).
- Areas that contain significant and fragile cultural resources.
- Areas where ESR is necessary to meet land use plan objectives.
- Areas that contain significant, fragile or damaged cultural resources

During the review and field examination of a burn area the interdisciplinary team would consider various sources of data to determine ESR treatment needs. Field examination of unburned islands, vegetation inventory data, project files, allotment monitoring data, standards and guideline assessments, and professional knowledge would be used to provide guidance for needed treatments.

## Proposed Treatments

### a. Natural Recovery

In many cases there is a sufficient amount of perennial plants remaining on-site that, if protected from further disturbances would allow for natural site recovery. Protection would be secured by temporary fencing, or deferment of grazing for at least two growing seasons. This treatment would allow those areas to recover from wildfires by preventing grazing of new and recovering vegetation.

**b. SEEDING AND PLANTING**

Revegetation would be implemented in areas that meet one or more of the following conditions: 1) sites highly susceptible to accelerated erosion, 2) where perennial plant species cannot reasonably be expected to provide soil and watershed protection, 3) areas with high densities of invasive annual species (e.g. cheatgrass (*Bromus tectorum*)), 4) areas where unacceptable vegetation such as invasive annual grasses and noxious weeds may readily invade and become established, 5) to protect SSS habitat, and 6) to stabilize or protect cultural resources at risk for damage or collection. Seeding and planting would be implemented to promote re-establishment of vegetation. Based on site-specific conditions, seeding and planting treatments may include: 1) seedbed preparation, 2) seed or plant application, 3) seed covering, and 4) appropriate seed mix selection.

**Seedbed Preparation and Seeding**

Seedbed preparation and seeding techniques would be used to reduce competition from undesirable species and to increase the germination and survival rates of desirable species. Methods employed will depend upon site specific conditions and would include the following:

- Herbicides may be used to control species of weeds or invasive species.

- Harrowing, cultipacking or chaining provides soil scarification, removes vegetation, and covers seed. This method is typically used in conjunction with broadcast seeding in areas where remnant large woody and/or rocky conditions prevent other cover treatments or in steep terrain not accessible to drills. Harrowing may be used as a cover treatment following broadcast seeding on relatively flat terrain with little remnant woody vegetation. The harrow pulls soil over the broadcasted seed to improve soil contact. A harrow contains numerous teeth which drag along the soil surface to cover seed and depending on size or location can be pulled by ATV, pickup, draft animals or tractor. A cultipacker may be used to improve seed-to-soil contact following seeding. A cultipacker consists of a heavy roller, or sets of wheels that roll across the ground to provide better seed to soil contact. Chaining may be used to turn soil, uproot competitive species and cover seed by pulling a chain behind two crawler-type tractors in a — **U** or **J** pattern. The chain may be of various sizes (generally 100 to 350-feet long). The width of each swath would vary from 50 to 120 feet.

- Rangeland drills would be used in a broad range of applications. A rangeland drill pulled by a rubber tired tractor or dozer drops seeds into 1 to 2 inch deep furrows spaced at approximately 12 inch intervals from a seed dispersal tube placed directly above each furrow. This seeding method is typically used in open, relatively flat topography that has very few larger rocks (8 to 10 inch diameter). This method works well in most

soil types. Rangeland drills can be equipped with depth bands to control depth of furrow openings. Farm type grain drills are sometimes substituted for rangeland drills with similar impacts. No or limited till drills may be used to: 1) minimize the mechanical impacts and soil disturbance, 2) place the seed at proper planting depth, and 3) optimize seed to soil contact.

- A land imprint seeder consists of a large drum with numerous V-shaped protrusions arranged around the circumference and is rolled over the ground to imprint small (approximately 4 by 18 inches) impressions in the soil surface. Seed is dispersed in front of the imprinter and pressed into the soil by the drum. The impressions trap additional moisture.

- Brillion type seeders use two cultipacker rollers. The leading roller crushes clods and forms a smooth seedbed in front of the seed drop. The trailing roller firms the seed into the soil. The rollers are notched to create little pockets to trap moisture. Seed is dispersed uniformly eliminating the row effect. The Brillion type of seeder is used in open ground with flat topography that is devoid of rocks.

- Shrub seed may be planted with a seed dribbler. This technique involves dribbling (dropping) seed from a container attached to the crawler tractor above the tracks. The seed is pressed into the soil as the tractor treads roll over it.

- Other drill/seeder configurations are sometimes used with a combination of implements similar to discs, cultipackers, and chains mentioned above.

- Ground broadcast seeding with a truck, all terrain vehicles, draft animals or hand powered drop or whirly-bird seeders would be utilized in very specific situations. In this method, seeds are dispersed by centrifugal force out of the seeder. Surface broadcasting of this nature would be used in areas that are too small (less than 10 acres) or are otherwise impractical for aerial seeding application. Dribble spreaders use an agitator and a metered opening to drop seed onto the ground. Surface broadcasting of this nature would be applied in open areas of relatively flat topography. This method should be used in combination with harrows, drag chains, cultipackers, or other equipment designed to optimize seed-to-soil contact, and to cover seed.

- Aerial broadcast seed spreaders distribute seeds on large areas where ground machines cannot operate efficiently, or are used to plant seed types that do not tolerate soil covering.

- Hand planting riparian and upland tree and shrub seedlings would be used when it is desirable to establish specific species quickly and

stabilize soils. Planting methods include bars, hodads, augers, or mechanical tree planters. Planting may be done where excessive soil erosion may precipitate mass soil wasting and/or there are potential source areas for debris flows due to the root rot of dead, burned trees. Plantings may also be utilized within crucial big game winter range or other habitats where shrubs or trees provide critical forage or habitat component and natural re-establishment within a reasonable time frame is not expected to occur.

- Hand methods such as raking may be used on a very site-specific basis to improve seed-to-soil contact on small seeding projects.

### c. Noxious and Invasive Weed Treatments

Noxious weeds that are designated by state and/or federal agencies are aggressive, invasive species that can invade, spread, and dominate a site. Potential is amplified for noxious weeds to invade/increase after a wildland fire disturbance. Containment and control of noxious weeds would be a high priority for ESR projects. The objectives of noxious weed treatment are containing and preventing further spread of known and newly invading populations of weeds through the appropriate level of weed control measures (early detection, treatment, control). Preventing or controlling noxious weed establishment depends on early detection. ESR weed detection efforts would focus on areas around known weed infestations within and adjacent to the ESR boundary as well as roads, water sources, and drainages. The 1991 Vegetation Treatment EIS is currently being updated to reflect changes in chemicals and technologies. The result of this update may be the addition of new herbicides and application techniques for conducting seedbed preparation and noxious weed control. Selection of an herbicide and the application rate for site-specific application would depend on its chemical effectiveness on a particular weed species, success in previous similar applications, habitat types, soil types, and proximity of the weed infestation to water and/or private property.

Herbicide application would include broadcast spraying or spot spraying with aircraft, backpack pumps, spraying from a pump unit on the back of a pickup truck or an All Terrain Vehicle, or pack animals to transport and apply herbicides in more rugged terrain. Ground based application would occur in smaller, fragmented patches of weeds and along trails and roads where herbicide treatment may be the most effective means of controlling or eradicating noxious and invasive non-native weeds.

Mechanical treatment is used to physically destroy, disrupt growth, or interfere with the growth and reproduction of noxious weeds. This can be accomplished by hand, hand tool, or power tool and may include pulling, grubbing, digging, hoeing, tilling, cutting, mowing, mulching, and burning. Mechanical treatments would typically be used primarily to control individual plants or very small, isolated infestations of weeds because larger weed infestations are very difficult

to control with mechanical treatment.

### d. Erosion Control

The objective of erosion control is stabilization of the hydrologic function of upland watersheds to: 1) trap sediment, 2) capture, store, and safely release rainfall and snowmelt, and 3) minimize the risk of degrading water quality.

**Hillslope Treatments**

Contour tree felling or contour log terracing perpendicular to the slope may be installed to trap sediment and improve infiltration, prevent slope rilling, and replace woody material consumed by fire. Lop and scatter to spread the limbs and branches of trees and shrubs (slash) on a slope may be used to provide protection from raindrop impact. If the branches and limbs are crushed or worked into contact with the soil surface, the slash would also help break up concentrated surface runoff and reduce erosion. Hand contoured trenches may be installed to trap sediment and improve infiltration, and prevent slope rilling. Mulch may be used to retard overland flow and protect soil from raindrop impact and increase soil moisture holding capacity. Straw bales or wattles may be installed to trap sediment and improve infiltration and prevent slope rilling. Geotextiles such as biodegradable erosion cloth/soil netting may be used to stabilize slopes above high-risk areas.

**In- and Near-Channel Treatments**

In- and near-channel treatments may be implemented to modify sediment and water movement in ephemeral and naturally intermittent (i.e. seasonally flowing) or small, headwater channels as needed to prevent flooding and debris where downstream life, property, or resources need to be protected. Grade-control structures may also be used to capture and store sediment that would otherwise be transported downslope. In most situations, bioengineering techniques (e.g. cuttings, willow wattles) or straw bale check dams, gravel bags, straw wattles that pass water and decompose over time would be used to stabilize channels because these structures have the lowest potential to damage channels if the structures fail. Willow wattles and woody riparian cuttings (i.e. bioengineering techniques) may be used instream for channel stabilization and grade control. Gabions may be used to trap sediment and control downcutting of severely eroded drainages. Straw bale and straw wattle check dams may be used to temporarily trap sediment and slowly release stored sediments as the check dam materials deteriorate. Log dams and in-channel felling (preferably whole trees) may be used to slow flow and trap sediment. Sandbags and low profile log or rock grade channel stabilizers that pass sediment may be used to reduce undercutting. Silt fences generally have a longer lifespan than straw bale check dams and may be used to stabilize in-channel sediments, trap suspended sediments, control downcutting and monitor erosion rates. Culvert repair, removal, or replacement may be needed to restore proper drainage.

### e. Protective Fences

The success of natural recovery or re-vegetation often depends on exclusion of grazing. Livestock and/or wild horse grazing would be deferred for at least two growing seasons, or until resource objectives are met, through the closure of pastures, resting whole allotments, or construction or reconstruction of protective fences as needed.

Gates, cattle guards, fences, and other control features would be repaired and/or constructed as needed to protect treatments during the recovery period or the seeding establishment period.

Removal of temporary fencing using ES funds would be accomplished within the 3 year funding cycle of ES. If the fencing is needed beyond 3 years, then maintenance and/or removal of the fencing must be accomplished using other BLM funding sources.

### f. Closures

Area, road, and trail closures may be implemented to protect an area from disturbance or if there is danger to the public due to fire damage or ESR activities.

**Area and/or Limited Closure:** Burned or seeded areas may be temporarily closed to the public by excluding vehicle, bicycle, horse, and foot use if unacceptable resource damage would occur, or if danger to the public is present due to fire damage or ESR activities. Access within the ESR project area may be temporarily limited during the recovery period (e.g. access limited to existing roads and trails). Temporary closures would be coordinated with Native American tribes to address concerns for access for the exercise of treaty rights.

**Enforcement:** Patrols by BLM Law Enforcement Rangers and non-enforcement staff may be conducted to monitor and enforce closures. Law enforcement services could also be contracted to local law enforcement agencies. Federal register notices would be published to initiate all closures, and signing would be completed as needed.

### g. Repair/Replace Minor Facilities Essential to Public Health and Safety

Minor facility, structure, road, and trail repair to address health and safety would be implemented under Emergency Stabilization. Road treatments such as properly spaced rolling dips, waterbars, and culverts may be used to move water past the road prism and to more effectively route water and sediment to prevent additional erosion, road damage, slope failures, and delivery to streams. Culverts would be inspected and maintained, repaired, or replaced following storms. Armoring crossings, culverts, and channels may be used to provide mechanical strength and to protect water quality. Typically, armor is installed in some form of riprap at locations where bridges or culverts require

protection from flood flows.

Public use facilities, structures, roads, and/or trails that pose a health or safety risk can be stabilized or closed to public use in order to protect human health and public safety. Public notices or signs necessary to close trails, warn of pending floods, promote public safety, or otherwise assist with Rehabilitation actions (e.g. directional, road, danger signs) may be posted or installed.

Repair or replacement of minor facilities such as structural damage to recreational facilities, fences, gates, watering troughs, wildlife guzzlers, and livestock handling facilities that were damaged by fire may be done under Rehabilitation.

### h. Livestock and Wild Horse Management

Exclusion of livestock is critical for the recovery of burned vegetation or establishment and protection of new seedings. Wildland fire areas would be closed to livestock grazing for a minimum period of two growing seasons to promote recovery of burned vegetation and/or facilitate the establishment of seeded species. Appropriate grazing use of healthy perennial vegetation communities of areas dominated by annual species prior to the two growing season limit may be allowed on a case-by-case basis, as consistent with objectives for improving or maintaining rangeland health and other objectives. Subsequent livestock management should maintain vegetation to meet LUP objectives and/or activity plan objectives. This may be accomplished through:

- Entire allotment or pasture closures, in whole or in part.
- Wild horse relocation and/or temporary removal may be necessary.
- Protective fences, cattle guards, temporary watering sites, and salt or mineral blocks may be used to control livestock and/or wild horse use.

Resumption of livestock grazing would ultimately depend on monitoring and meeting of ESR plan objectives. Recovery of the treated area would be monitored for availability to grazing on a yearly basis.

Supervision of the burn area would be done to insure the grazing closure remains in effect until plant recovery occurs. Any grazing of the closed areas would be considered unauthorized use, and any unauthorized use would be properly documented and action taken to insure it does not continue.

### i. Cultural Site Protection, Stabilization, and Repair

**Emergency Stabilization**

The goal of cultural site Emergency Stabilization is to prevent further damage to known cultural resources resulting from the effects of the fire. Known and newly identified cultural resources and paleontological locations within the boundaries of a wildland fire would be assessed to determine their significance, appropriate immediate protection measures, and record fire damage to site

elements. Hand seeding or low impact seeding would be implemented on sites to stabilize soils in the site area and decrease visibility as protection against illegal artifact collection. Where identified, cultural landscapes, sacred sites and traditional cultural properties would be afforded the same considerations and protection applied to all identified cultural resources. Increased law enforcement patrolling may be used to protect cultural resources.

**Design Features for Cultural Site Treatments**
The Oregon SHPO and Native American Tribes would be consulted in planning cultural site treatments. Treatments would be placed where they would not adversely affect associated sites, artifacts or historic landscapes. Preference would be given to the use of native species for revegetation at cultural resource sites and landscapes.

**Proposed Treatment Design Features**

The SEORMP Record of Decision (ROD) indicates that the Desired Range of Future Conditions for Malheur and Jordan Resource Area big sagebrush habitats will incorporate management actions intended to moderate the amount of grassland habitat resulting from land treatments and wildfire. The ROD objective is to manage so that $\geq$ 70% of the big sagebrush habitats in each of the Malheur and Jordan Resource Areas are in a structural and ecological condition class which will support sage-grouse and other species of wildlife dependent upon sagebrush habitats.

Emergency Stabilization or Rehabilitation Plans can be used to help manage for the proper Desired Range of Future Conditions over the long term by careful consideration of sagebrush community composition and structure at multiple scales. This is done by considering the Resource Area objective as well as Geographic Management Area and livestock management pasture conditions. ROD pages F-5 through F-11 indicate the preferred arrangements of sagebrush habitats and the minimum proportions of habitats that should be found within livestock management pastures in order to meet Standard 5 of the OR/WA Rangeland Standards and Guides.

ESR plans tiered to this Normal ESR document will describe how they relate to Geographic Management Area (GMA) and pasture level objectives. ESR and other Rehabilitation plans should not be formulated in isolation from the Oregon/Washington Standards and Guides because of their influence on important plant structural and functional groups (pages 30-31, Interpreting Indicators of Rangeland Health, Technical Reference 1734-6)

- Seedbed preparation, application, and covering projects would run along the contours of the land, whenever possible and practical to reduce erosion and to reduce visual contrast in locations of high aesthetic values.

- Herbicide treatments would be done according to Vale District's five year Integrated Weed Control Program and Environmental Assessment No. OR-030-89-19, tiered to the Northwest Area Noxious Weed Control Program Environmental Impact Statement (December 1985) and Supplement (March 1987) which addresses the environmental and human impacts, and provides the design features and guidance in applying herbicides on BLM administered lands within the Vale District. All herbicide applications would follow manufacturer herbicide label instructions, specifications, and precautions as well as applicable BLM policy. In instances where herbicide labels, federal, or state stipulations overlap, the more restrictive criteria would apply. Application of any herbicides to treat noxious weeds would be performed by or directly supervised by a state or federal licensed applicator. Vehicles and equipment would be cleaned and inspected prior to entering project sites when operating in areas of weed infestations to prevent seed transport.

- All seed would be tested to insure compliance with the state noxious-seed requirements recognized in the USDA Administration of the Federal Seed Act. All purchased seed must meet all requirements of: 1) the Federal Seed Act (7 USC 1551-1610), 2) the state seed laws where it will be delivered, and 3) federal specifications JJJ-S-181. All seed will be tested for purity, germination, noxious weed seeds, and moisture content to meet contract specifications. Purchased seed will be identified by certified variety/cultivar tags or source identified tags to insure the genetic origins of the parent plant material or the collection origin as per the USDI and USDA Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook. Seed would be planted during the appropriate season to ensure seed stratification, germination, and establishment.

- Operations would be suspended or modified during periods when wet soils are at field capacity to minimize soil disturbance.

- Only certified weed-free straw would be used in straw bales and sand bag fill material used in erosion control and mulching.

- Fence construction and reconstruction would conform to BLM Handbook specifications (H1741). Fences constructed in wild horse herd management areas or within big game use areas would be flagged along the wires between line posts to reduce the chance for collision and entanglement. Where required, brush clearing for fence construction would be kept to the minimum required for fence construction.

**Seed Selection**

Plant materials would be selected and seed mixtures designed to best meet the objectives identified in the site-specific ESP or RP consistent with LUP, or activity plan direction. Native seed would be used when available in sufficient quantities to meet these objectives.

Species planted on burned areas must provide the protection required by ESP objectives and be in compliance with Executive Order 13112, *Invasive Species* (USDI 2/3/99). The use of native species is preferred to the use of non-natives. The use of non-native seed may be appropriate if:

- Suitable native species are not available.
- The natural biological diversity of the site is already diminished beyond ecological thresholds.
- Exotic and naturalized species can be confined within the proposed treatment area.
- Natives cannot be maintained in high disturbance areas.

The use of local seed sources for native plants is recommended, especially for ecotypes of plants like big sagebrush (*Artemisia tridentata* spp.). Important elements that would be considered in selecting a seed mixture that includes native plants include the following:

- Availability at a reasonable cost per acre. The BLM considers and understands that as the demand for native seed increases, production costs should decline.
- Adaptation to the area proposed for treatment (e.g. stratify seed mix by elevation and different site potentials). The use of local, native ecotypes is encouraged.
- Impacts of competition (e.g. invasive species, noxious weeds, other plants in the seed mixture, land uses) on native plant establishment and persistence.
- Requirements to maintain native species to meet specific management objectives of an area

The revegetation species in Appendix A are intended as a guide and would be applied at rates applicable to: 1) pre- and post-fire site conditions, 2) other resource considerations, and 3) management objectives. Parameters such as soil properties, erosion potential, aspect, elevation, precipitation zones, invasive and noxious weed species competition, intended use, potential plant community, watershed stability, seed availability, and costs would be evaluated in developing seed mixtures. Other seed species may be considered as they become available.

## Design Features for Sensitive Resources

### a. Special Status Species

Proposed projects would be reviewed for the presence of special status plants and animals and their habitat during development of a plan. If special status plant and /or animal populations or habitats are known or suspected to occur in a site-specific project area, the area would be examined for habitat quality and the need for rehabilitation treatments. Treatments would be designed taking into account policy and/or program or land use plan guidance for treatment activities i.e. buffers, seasonal restrictions etc. appropriate to the species involved.

**b. Riparian, Wetland and Aquatic Habitats**

Riparian and wetland habitats are those portions of a watershed required for maintaining hydrologic, geomorphic, and ecological processes that directly affect streams, stream processes, fish habitats, and where riparian, wetland, and aquatic dependent resources would receive primary emphasis. Treatments would be designed taking into account policy and/or land use plan guidance for treatment activities, i.e. buffers, restrictions etc. to protect and maintain these habitats.

**c. Special Management Areas**

**Areas of Critical Environmental Concern**

Areas of Critical Environmental Concern (ACEC), Wild and Scenic River corridors (WSR) burned in wildland fire would be treated to protect the values for which the area was established and in conformance with specific management directions in the existing LUPs and Activity Plans. Nonnative species will not be used for rehabilitation in ACECs and RNAs in accordance with the Southeastern Oregon RMP.

**Wilderness Study Areas**

Emergency Stabilization in Wilderness Study Areas (WSAs) would be evaluated under the guidelines found in the Bureau's Interim Management Policy and Guidelines for Lands under Wilderness Review (IMP) H-8550-1 and the Interagency Burned Area Emergency Stabilization and Rehabilitation Handbook. Emergency stabilization treatments required to stabilize soils and rehabilitate vegetation in the long term would be conducted in a manner that would not impair wilderness suitability. Treatments would utilize the minimum tool and methods designed to enhance or restore wilderness resources. Nonnative species will not be used for rehabilitation in WSAs in accordance with the Southeastern Oregon RMP.

**d. Cultural Resources**

Prior to conducting any surface disturbing ESR activities, consultation with the State Historic Preservation Officer (SHPO) and Native American governments

would be conducted in compliance with Section 106 of the National Historic Preservation Act. Inventories for ESR activities would be conducted for cultural resources prior to ground disturbing activities. Where significant sites occur in the area of potential effect the Oregon State Historic Preservation Officer would be consulted per the Oregon Protocol of the BLM National Programmatic Agreement.

Cultural resource sites identified during the inventory would be recorded, temporarily marked, and avoided. If cultural resources cannot be avoided, further work would be undertaken to protect or mitigate adverse affects to the site(s). A buffer may be designated to protect cultural resource sites as necessary. Marking of flagging of sites would be immediately removed following implementation activities.

ESR treatments, in areas known to include sacred sites or National Register eligible traditional cultural properties would be developed in consultation with Native American Tribes.

**Monitoring**

As each rehab or ESR plan is completed, Vale District will keep a running tally of seeding actions and store this data in the Geographical Information System (GIS) and project data systems. When combined with other seeding actions that may emerge from the Rangeland Standards and Guides Evaluations process, a thorough accounting of all treatment actions will be possible. This recordkeeping procedure will allow the agency to demonstrate conformance with the land use plans over time.

Individual ESR plan objectives would be developed on a site by site basis depending on individual site specific needs.

All ESR plans would include treatment monitoring in order to: 1) determine if plan objectives were met, 2) establish the need for additional treatments, 3) determine if treatments are implemented as planned and 4) document results. Monitoring and evaluation of ESR treatments would be implemented to ensure that treatments are properly implemented, effective, and maintained. Monitoring methods may be qualitative or quantitative, and would be commensurate with the level of treatment complexity and extent. Monitoring and evaluation information would provide adaptive management feedback to improve future ESR treatment performance.

The methods used to monitor the treated area may include field observations, photographic plots, and vegetation sampling transects or plots.

Monitoring and evaluation to determine the effectiveness of treatments would be funded for up to three years following control of a fire. Funding beyond the first year of monitoring requires submission of annual accomplishment report(s) on success/failure of treatments.

# III. AFFECTED ENVIRONMENT

The following discussions focus on those aspects of the physical, biological, and human environments most likely to be affected by the proposed NFESRP. These discussions are not intended to be a comprehensive catalog of the District's resources. Resources that are unlikely to be affected by the proposed project are not described or are only briefly described in this section. Table 1 lists the critical elements that must be considered in accordance with specific executive orders.

**Table 1: Critical Element**

| Consideration of Critical Elements | N/A or Not Present | Applicable/ Present No Impact | Discussed In EA |
|---|---|---|---|
| Air Quality | | | X |
| Areas of Critical Environmental Concern | | | X |
| Cultural Resources | | | X |
| Environmental Justice (E.O. 12898) | X | | |
| Farm Lands (prime or unique) | X | | |
| Invasive, Non-native Species | | | X |
| Migratory Birds | | | X |
| Native American Religious Concerns | | | X |
| Threatened or Endangered Species | | | X |
| Wastes, Hazardous Substances or Solid Wastes | | | X |
| Water Quality | | | X |
| Floodplains | | | X |
| Wetland/Riparian Zones | | | X |
| Designated & Eligible Wild & Scenic Rivers | | | X |
| Wilderness | | | X |

## A. SOILS

Soils on the Vale District are extremely diverse. This diversity is a result of parent material variability, slope, aspect, elevation, climate, and vegetative communities. Soils in semiarid southeastern Oregon are young and poorly developed. Chemical and biological soil-building process such as rock weathering, decomposition of plant materials, accumulation of organic matter, and nutrient cycling proceed slowly in this environment. Because soil recovery processes are also slow, disruption of soils can lead to long-term changes in ecological conditions and productivity. Of particular concern are the sandy, loamy sand and sandy loam soils that are very susceptible to wind and water erosion when the protective vegetative cover is removed by wildfire. Soils that occur on slopes exceeding 30 percent are classified with a high erosion potential. Erosion from water is the primary concern and occurs in the form of sheet, rill, and gully processes.

## B. WATER, FLOODPLAINS/WETLANDS/RIPARIAN ZONES

Precipitation in the Vale District ranges from less than 8 inches along the Snake River Plain to greater than 22 inches in the higher mountain ranges. Major drainages include the Owyhee, Malheur, Grand Ronde, Umatilla, Powder, Walla Walla, Burnt and Snake Rivers.

Peak runoff generally occurs from March through May. High intensity, short duration rainstorms are common in summer and fall, coincident with the wildfire season, and often result in flash floods that are typified by high sediment loads. The predominant water quality parameters related to the effects of fire are: 1) fine sediment deposition, 2) temperature increases due to solar heating when streamside canopy cover is removed, and 3) nutrient loading.

Water quality is affected by particulates and pollutants suspend in the waters of rivers and streams. Suspended particulates from soil erosion and runoff are the major concerns for water quality in the District. ESR activities would be directed towards improving and maintaining water quality on public lands.

## C. AIR

Under criteria established in the Clean Air Act (as amended 1990) Two Class I airsheds occur within the Baker Planning Area: the Hells Canyon National Recreation Area and the Eagle Cap Wilderness Area. The remainder of the planning area is classified as a Class II air quality classification which allows for moderate deterioration associated with moderate, well-controlled industrial and population growth. Class I areas have the greatest limitations and virtually no degradation of air quality is allowed. Strong winds may carry large amounts of dust and ash into the air after a fire occurs. On occasion, the dust and ash can cause reduced visibility, and drift into roads, ditches, and other low spots where it can hamper traffic and contribute to accidents.

## D. VEGETATION

### General Vegetation

The following common vegetation cover types in Table 2 are the habitats where wildland fire typically occurs, and ESR treatments are typically implemented. Plants of cultural importance to Native American tribes are found within the cover types listed below.

**Table 2: Vegetation Covertypes**

| Covertype | Major Plant Species |
|---|---|
| Low-Elevation Shrub-Steppe | Wyoming big sagebrush, basin big sagebrush, low sagebrush, bitterbrush, gray and green rabbitbrush with native grass, forb and microbiotic crust understory. |
| Perennial Grass | Seeded areas (native and exotic) and native grasslands (e.g. bluebunch wheatgrass, needlegrass, Idaho fescue). Perennial native grasslands are sometimes a seral stage of low and mid-elevation shrub-steppe. |
| Annual Grass | Primarily cheatgrass and medusahead wildrye. This is a dysfunctional, alternate stable state covertype that results from the disturbance of low and mid-elevation shrub steppe. |
| Mid-Elevation Shrub-Steppe | Mountain big sagebrush, low sagebrush, black sagebrush, and bitterbrush with native grass, forb and microbiotic crust understory. |
| Juniper | Western juniper often with mountain mahogany. Western juniper encroachment in sagebrush-steppe and riparian habitats. |
| Dry Conifer | Ponderosa pine, lodgepole pine, and Douglas-fir. |
| Aspen/Conifer | Includes healthy stands of aspen and stands of aspen that are being invaded by conifers. |
| Mountain Shrub | Serviceberry, ceanothus, snowberry, mountain mahogany, chokecherry, and antelope bitterbrush with a native grass and forb understory. |
| Wet/Cold Conifer | Lodgepole pine, sub-alpine fir, western larch, and Engelmann spruce. |
| Riparian Areas | Streamside and wetland areas of cottonwood and willow as well as graminoid (grass/sedge/rush) communities. |
| Salt Desert Shrub | *Atriplex* species (four-wing, shadscale), spiny hopsage, winterfat, and greasewood with a native grass, forb, and microbiotic soil crust understory. |

**Low-Elevation Shrub-Steppe**

The Low-Elevation Shrub-Steppe covertype is dominated by Wyoming big sagebrush (*Artemisia tridentata* ssp. *wyomingensis*) and basin big sagebrush (*Artemisia tridentata* ssp. *tridentata*). This covertype is found in areas with about 8 to12 inches of average annual precipitation and warm soils. Low-Elevation Shrub-Steppe historically had moderate to long fire return intervals (60-100+ years). Much of the Low-Elevation Shrub-Steppe is comprised of degraded rangelands that have been invaded by annual, exotic vegetation or have been seeded to nonnative grass species. Basin big sagebrush occurs on deep and well-drained soils. Wyoming big sagebrush occurs on finer-textured, shallow soils with limited water infiltration. Gray rabbitbrush (*Ericameria nauseosa*) and green rabbitbrush (*Ericameria viscidiflora*) re-sprout following disturbance, and may be co-dominants in sagebrush communities that have been influenced by fire.

Native understory vegetation associated with Low-Elevation Shrub-Steppe is dominated by perennial grasses and a variety of annual and perennial forbs. Dominant grasses include bluebunch wheatgrass *(Pseudoroegneria spicata)*, western wheatgrass (*Pascopyrum smithii*), thickspike wheatgrass (*Elymus macrourus*),

Thurber's needlegrass (*Achnatherum thurberianum*), Sandberg's bluegrass (*Poa secunda*), bottlebrush squirreltail (*Elymus elymoides*), needle-and-thread grass (*Heterostipa comata*), Indian ricegrass (*Achnatherum hymenoides*). Common forbs include long-leaf phlox (*Phlox longifolia*), Hood's phlox (*Phlox hoodii*), arrowleaf balsamroot (*Balsamorhiza sagittata*), taper-tip hawksbeard (*Crepis acuminata*), desert-parsley (*Lomatium*), buckwheat (*Eriogonum*) and woolly-pod milkvetch (*Astragalus purshii*). Low-Elevation Shrub-Steppe communities in good condition may support biological soil crusts in the interspaces. The composition of biological crusts is dependent on soil texture and chemistry, but is usually dominated by lichens, mosses, and cyanobacteria.

**Perennial Grass**

Historically, native Perennial Grass covertype formed part of the seral mosaic of the sagebrush-steppe, although it is unclear how widespread they were across the landscape. Perennial Grass is considered an early to intermediate seral stage, and is comprised of native sites with Idaho fescue (*Festuca idahoensis)*, bluebunch wheatgrass, western wheatgrass, thickspike wheatgrass, Thurber's needlegrass, Sandberg's bluegrass, needle-and-thread grass, Great Basin wildrye (*Leymus cinereus*), and Indian ricegrass, as well as seedings of exotic and native perennial grass cultivars such as crested wheatgrass, Siberian wheatgrass (*Agropyron fragile*), Snake River wheatgrass (*Elymus wawawaiensis*), bluebunch wheatgrass, thickspike wheatgrass, and Great Basin wildrye. Some Perennial grasslands will develop into diverse sagebrush-steppe habitats if undisturbed for 20 to 70 years, without further disturbance from wildland fires. Other Perennial Grass covertypes appear to be stable plant communities. Biological soil crusts with compositions similar to those found in low and mid-elevation shrub-steppe can occur in good condition perennial grasslands, depending on time since fire and seeding disturbance (Hilty *et al.* 2004).

Perennial grasslands dominated by crested wheatgrass or other non-native cultivars are stable communities that do not trend toward recovery to sagebrush-steppe habitat as quickly as native perennial grasslands. Crested wheatgrass has a loose crown and burns quickly, so is less susceptible to fire damage from heat transfer to the roots than other bunchgrasses. It is moderately flammable, produces a moderate amount of litter, is competitive, it resprouts easily, and it has an extensive range. A mature stand of crested wheatgrass can help control annual grassland fires by acting as a fuel break, particularly in sagebrush-steppe habitats (Monsen 1994). Sagebrush re-establishment in crested wheatgrass stands is apparent in portions of the District. On more suitable sites and in higher precipitation zones, sagebrush will typically reclaim exotic seedings in 20 or 30 years.

**Annual Grass**

The Annual Grass covertype was not part of the District's historical vegetation. Cheatgrass and medusahead wildrye (*Taeniatherum caput-medusae*) form a dysfunctional, stable state covertype in highly disturbed sagebrush-steppe (Laycock 1991). Once annual grasslands and their associated fire regime have become established, it is extremely difficult to regain a perennial dominated community. The

presence of cheatgrass and medusahead wildrye extends the time during which the community is susceptible to wildland fire ignitions because these species ripen earlier in the growing season than most native perennials. Both species are winter annuals that can germinate between autumn and spring when temperature and soil moisture conditions are suitable. Native grasses are dormant through winter, and germinate and grow later in the spring. This difference in phenology gives the exotic annuals a competitive edge over the native perennials.

Degraded sites are most susceptible to annual grass invasion after disturbance, and an abundance of exotic annual grasses in the understory enhances the likelihood of fire spread and conversion of sagebrush-steppe to annual grassland.

**Mid-Elevation Shrub-Steppe**

The Mid-Elevation Shrub-Steppe covertype occurs from about 5000 to 7500-foot elevation in precipitation zones that range from 12 to 20 inches annually. Mid-Elevation Shrub-Steppe occurs on cooler soils, and often has more intact native communities than the Low-Elevation Shrub-Steppe. Dominant shrubs are mountain big sagebrush (*Artemisia tridentata* ssp. *vaseyana*), gray rabbitbrush, green rabbitbrush, low sagebrush (*Artemisia arbuscula*), black sagebrush (*Artemisia nova*), and antelope bitterbrush (*Purshia tridentata*). Early low sagebrush (*Artemisia longiloba*) and silver sagebrush (*Artemisia cana*) dominate minor communities.

Mid-Elevation Shrub-Steppe is less vulnerable to conversion to annual grasslands than Low-Elevation Shrub-Steppe; however, exotic annual grasses can invade and dominate these communities, particularly drier/warmer and/or degraded sites. Juniper has invaded some Mid-Elevation Shrub-Steppe as a result of lack of natural fire.

Perennial grasses such as Idaho fescue, bluebunch wheatgrass, prairie Junegrass (*Koeleria macrantha*), and Sandberg's bluegrass dominate the understory of the Mid-Elevation Shrub-Steppe. Perennial forbs are also important understory components of this type and may include arrowleaf balsamroot (*Balsamorhiza sagittata*), Indian paintbrush (*Castilleja*), owl-clover (*Orthocarpus*), beardtongue (*Penstemon*), and buckwheat (*Eriogonum*).

Biological soil crusts may be present in Mid-Elevation Shrub-Steppe on drier sites with a lower density of understory vegetation. Low sagebrush, black sagebrush, and early low sagebrush communities often have well-developed biological crusts that occupy the soil between the rocks and tends to be abundant on sites supporting these shrubs. These crusts tend to be dominated by a diversity of lichens and mosses.

**Juniper Woodlands**

The Juniper Woodlands covertype includes stands of western juniper (*Juniperus occidentalis*), as well as areas where juniper has encroached into Wetland Riparian, Mid-Elevation Shrub-Steppe, and mountain shrub vegetation types. Natural western juniper stands occur in fire-safe habitats such as shallow soil, rocky areas and lava flows. It provides important habitat for a diversity of non-game birds, bats, deer, elk,

and other wildlife.

Juniper woodlands primarily occur between 4,000 to 7,000-foot elevation on a wide variety of soils in 10 to 15 inch precipitation zones. Western juniper is common in the northern and western portion of the Malheur Resource Area where it occurs as a transitional plant community between the Low-Elevation Shrub-Steppe and the higher elevation Mountain Shrub or Dry Conifer covertypes. Juniper Woodlands have increased their distribution through encroachment into sagebrush-steppe, mountain shrub, riparian, and aspen communities primarily as a result of fire suppression.

Biological soil crusts may be present in juniper woodlands depending on soil characteristic, precipitation, and density of the herbaceous understory. These crusts are dominated by lichens, mosses, and cyanobacteria.

**Dry Conifer**

The Dry Conifer covertype includes Douglas-fir (*Pseudotsuga menziesii*), lodgepole pine (*Pinus contorta*), and ponderosa pine (*Pinus ponderosa*). All three of these conifer types provide valuable habitat for deer and elk, as well as numerous small mammals and breeding birds. Douglas-fir occurs between 3,000 to 7,000-foot elevations on variable soils in 20 to 30 inch precipitation zones. Douglas-fir stands often occur between ponderosa pine and spruce-fir communities, and as isolated patches on cool, north slopes.

Ponderosa pine occurs between about 3,000 to 6,000-foot elevation on a variety of soils in 15 to 30 inch precipitation zones. It occurs on warmer, drier sites compared to Douglas-fir. Interior ponderosa pine evolved under a regime of frequent surface fires and infrequent mixed severity and stand replacement fires, however, ecological changes that have occurred over the last century (e.g. logging overstory pines, climate change, and fire suppression) have created dense understory, closed canopy stands which provide high levels of ladder fuels. In the past, severe, stand replacing fires were an infrequent occurrence in interior ponderosa pine forests, however, they have now become more common (Arno and Harrington 1995).

Lodgepole pine is a pioneer species that grows in a wide range of ecological conditions from low to high elevations. High-intensity fire generally exposes mineral soil, opens serotinous cones, and releases seed onto favorable seedbeds which results in abundant and rapid seedling establishment (USDA Forest Service 2004).

**Aspen/Conifer**

The Aspen/Conifer covertype occurs between 5,500 to 8,000-foot elevations on a variety of soils, but is best supported in deep, moist, loamy soils in a range of precipitation zones (16 to 40 inches average annually). Aspens occur in pure stands or in association with various conifers such as Engelmann spruce, lodgepole pine, ponderosa pine, and Douglas-fir. Aspen also occur as inclusions in the Mid-Elevation

Shrub-Steppe and Mountain Shrub covertypes. Aspen communities can be a climax stage or a seral stage to climax conifer communities. Although conifer invasion is a natural pattern in many aspen stands, long-term fire suppression has resulted in an increased representation and dominance by conifers in aspen stands, reducing the extent of aspen-dominated stands and increasing fire hazard.

**Mountain Shrub**

The Mountain Shrub covertype occurs as a transition community between sagebrush-steppe and conifer types. Mountain Shrub is found at moderately high elevations, often in a mosaic with Douglas-fir and aspen communities, on sites that are more mesic than sagebrush-steppe (14 to 16 inch precipitation zones) but drier than aspen (18 to 24 inch precipitation zones). Mountain Shrub is usually found on north and east slopes that tend to be cooler and moister than south and west aspects. Mountain Shrub is a highly diverse type containing chokecherry (*Prunus virginiana*), serviceberry (*Amelanchier alnifolia*), currant (*Ribes* spp.), mountain snowberry (*Symphoricarpos oreophilus*), and blue elderberry (*Sambucus nigra* ssp. *cerulea*), often intermingled with mountain big sagebrush. Mountain mahogany (*Cercocarpus ledifolius*) occurs on rocky, often fire-resistant inclusions. The Mountain Shrub covertype, with its high productivity and diverse herbaceous understory, provides important ecosystem biodiversity, wildlife habitat, and protective ground cover.

Sites dominated by antelope bitterbrush occur in the Low-Elevation Shrub-Steppe zone from 3,500 to 5,500-foot elevation. Bitterbrush is often intermingled with big sagebrush covertypes, and occurs in open stands with an understory of bluebunch wheatgrass, Idaho fescue, Sandberg's bluegrass, and needle-and-thread grass (*Heterostipa comata*). Antelope bitterbrush is very susceptible to fire kill. Its ability to sprout after being burnt is highly variable. High fuel consumption increases mortality and therefore favors seedling establishment.

Mountain Shrub communities generally recover rapidly following wildland fire and are considered to be fire tolerant.

**Wet/Cold Conifer**

The Wet/Cold Conifer covertype occurs at high elevations in the colder, more humid environment above the Dry Conifer covertype. Wet/Cold Conifer is dominated by lodgepole pine, Engelmann spruce (*Picea engelmannii*), and sub-alpine fir (*Abies lasiocarpa*). At lower and mid-elevation sites, subalpine fir occupies areas that are too dry or too low in nutrients for Engelmann spruce. At higher elevations it is not uncommon to find pure stands of Engelmann spruce. Spruce-fir communities occur above 7,000-foot elevation on shallow soils in 25 to 40 inch precipitation zones. Lodgepole pine communities occur above 6,000 feet on a variety of soils in 15 to 30 inch precipitation zones. Lodgepole pine is often regarded as an early seral stage for spruce-fir and Douglas-fir communities.

**Wetland and Riparian**

The Riparian and Wetland covertypes are areas of land directly influenced by

permanent water or seasonably high water tables. These areas have vegetation, soil, and hydrologic features which reflect moist or saturated conditions. The dominant vegetation in these communities are riparian deciduous trees, riparian forbs and shrubs, wet meadow, and marsh. Riparian plant communities are typically dominated by species such as cottonwoods (*Populus* spp.), willows (*Salix* spp.), sedges (*Carex* spp.), and rushes (*Juncus* spp.). Riparian areas and wetlands have always been naturally limited in the arid and semi-arid West. They constitute only a fraction of the total land area, but they are the most productive in terms of plant and animal species. Thus, riparian areas and wetlands are critically important to wildlife, water quality, aquatic habitat, and watershed function. Riparian areas and wetlands can be found scattered throughout the District and occur at all elevations. Although riparian areas and wetlands can act as fuel breaks, they do not necessarily act as fire barriers. Studies suggest that historical fires regularly affected riparian areas (Olson 2000).

**Salt Desert Shrub**

The Salt Desert Shrub covertype is dominated by halophytes and succulent shrubs that are saline tolerant, including: four-wing saltbush (*Atriplex canescens*), shadscale (*A. confertifolia*), winterfat (*Krascheninnikovia lanata*), budsage (*Artemisia spinescens*), and greasewood (*Sarcobatus vermiculatus*). Common grasses include inland saltgrass (*Distichlis stricta*), alkali sacaton (*Sporobolus airoides*), Indian rice-grass (*Achnatherum hymenoides*), and bottlebrush squirreltail (*Elymus elymoides*). Greasewood favors deeper soils with an accessible water table, as well as high pH and alkaline content. Biological soil crusts are common in good condition Salt Desert Shrub communities due to sparse vegetative cover, large interspaces, and fine-textured soils with high calcium carbonate or saline content at the surface. These crusts are primarily dominated by lichens and cyanobacteria.

Productivity in this type is relatively low, understory vegetation is naturally sparse, and fuels are generally light. The natural fire rotation in the Salt Desert Shrub type is very long, 100 years or more. At present, cheatgrass has invaded some Salt Desert Shrub communities but has not resulted in large scale changes in the fire ecology of this vegetation type.

**Invasive Non-Native Plants**

In addition to cheatgrass and medusahead wildrye invasions, vegetation resources are also threatened by a variety of noxious weeds listed by the states of Oregon and Washington. Species such as diffuse knapweed (*Centaurea diffusa*), Russian knapweed (*Acroptilon repens*), spotted knapweed (*Centaurea biebersteinii)*, Canada thistle (*Cirsium arvense*), leafy spurge (*Euphorbia esula*), yellow star-thistle (*Centaurea solstitialis*), Mediterranean sage (*Salvia aethiopis*) and rush skeletonweed (*Chondrilla juncea*) have exhibited a tendency to increase and expand following wildland fires. This is especially true in disturbed or degraded areas such as roads, trails, livestock developments, and annual vegetation types.

Noxious weeds that were previously unknown from a site are often discovered

following a wildfire. Noxious weed seeds or propagules can be transported on fire suppression and fire rehabilitation equipment. This may be due to the fact that established noxious weeds re-grow quickly and are more easily seen after a fire removes the vegetation around them. The removal of other vegetation effectively reduces competition and allows noxious weeds to become established in areas where they were not previously found.

**Special Status Plants**

Special Status (SS) plants consist of ESA listed, proposed and candidate species; as well as BLM sensitive, assessment, and tracking species. Listed and proposed species may also have ESA designated or proposed critical habitat. The policy of the BLM is to 1) conserve SS plants including their habitats, and 2) to not authorize any actions which would contribute to the need to list any species under the ESA. Special Status plants occur in a wide diversity of habitats and soil types. There are no federally listed plant species that have been documented on BLM lands of the Vale District. Three species of federally listed threatened plant species have the potential to occur on the Baker Resource Area of the Vale District. These three species are Macfarlane's four-o'clock (*Mirabilis macfarlanei*), Spalding's catchfly (*Silene spaldingii*), and Howell's spectacular thelypody (*Thelypodium howellii* ssp. *spectabilis*). BLM sensitive plant species that have been documented on the Vale District and a brief description of their habitat are shown in the table below. The majority of SS plant species on the Vale District occur within sagebrush habitats.

**Table 3: Sensitive Plant Species documented on the Vale District**

| Species Name | Habitat | Oregon Department of Agriculture Status |
|---|---|---|
| *Amsinckia carinata* (Malheur Valley fiddleneck) | Baked yellow ash tuff formed into loose cobbles on talus formation | Listed Threatened |
| *Arabis crucisetosa* (cross-haired rockcress) | Wet banks, moist soil, and coniferous woods; Snake River Canyon | Threatened in WA |
| *Astragalus cusickii var. sterilis* (sterile milkvetch) | Shallow ash loam of basalt origin. Vegetation surrounding barrens: Wyoming big sagebrush/bottlebrush squirreltail | Listed Threatened |

| | | |
|---|---|---|
| *Astragalus mulfordiae* (Mulford's milkvetch) | Sand, with big sagebrush-green rabbitbrush/Indian ricegrass, arrowleaf balsamroot. Mostly south to west aspects | Listed Endangered |
| *Calochortus macrocarpus var. maculosus* (green-band mariposa-lily) | Dry plains, rocky slopes, sagebrush scrub, pine forests, usually in volcanic soil | |
| *Caulanthus major var. nevadensis* (slender wild cabbage) | Dryish, often rocky slopes talus slopes in canyons, sometimes in shade | Candidate |
| *Collomia renacta* (Barren Valley collomia) | Scablands. With grey rabbitbrush and Sandberg's bluegrass, forbs. Lightly disturbed south-facing rocky soil near drainage bottom, ecotone between big sagebrush and low sagebrush plant associations | Candidate |
| *Cymopterus acaulis var. greeleyorum* (Greeley's cymopterus) | Sandy soil and brown and white volcanic ash in Wyoming sagebrush, desert shrub and Indian ricegrass zones | |
| *Eriogonum chrysops* (golden buckwheat) | Barren scablands with Sandberg's bluegrass and forbs | Listed Threatened |
| *Eriogonum prociduum* (prostrate buckwheat) | On gravelly or ashy slopes and ridge tops in the mixed grassland and sagebrush communities and juniper woodlands | Candidate |
| *Hackelia cronquistii* (Cronquist's stickseed) | Sandy sagebrush north facing slopes. Sometimes on slopes in moist ravines. With big sagebrush, bitterbrush, bluebunch wheatgrass and Idaho fescue | Listed Threatened |
| *Ivesia rhypara var. rhypara* (grimy ivesia) | On loose light colored volcanic tuff. With bitterbrush, Wyoming sagebrush, Sandberg's bluegrass | Listed Endangered |
| *Lepidium davisii* (Davis' peppergrass | On hard, grayish-white clay depauperate playas. Sites are poorly drained often seasonally inundated by standing water | Listed Threatened |
| *Mentzelia mollis* (smooth mentzelia) | Only on barren green or grey-green volcanic clays derived from Succor Creek Formation | Listed Endangered |
| *Mentzelia packardiae* (Packard's mentzelia) | Only on barren greenish volcanic ash slopes | Listed Threatened |

| | | |
|---|---|---|
| *Mimulus evanescens* (disappearing monkeyflower) | In rimrock and ephemeral stream channels at upper elevations in sagebrush juniper vegetation. | Candidate |
| *Phacelia lutea var. mackenzieorum* (Mackenzie's phacelia) | Alkaline, usually barren clay (rarely sandy) banks and flats in the deserts and foothills. | |
| *Pogogyne floribunda* (profuse-flowered pogogyne) | Playas and playettes, within the sagebrush zone. | |
| *Pyrrocoma radiatus* (Snake River goldenweed) | Dry, rocky, often open depauperate soil. With big sagebrush, Sandberg's bluegrass. In Snake River Canyon, and its tributaries, and Hunt Mountain | Listed Endangered |
| *Senecio ertterae* (Ertter's groundsel) | Barren dry greenish-grey clay-ash talus. Most common along the bottom of gulches | |
| *Stanleya confertiflora* (biennial stanleya) | Somewhat sparsely vegetated clay soils in sagebrush steppe vegetation | |
| *Trifolium owyheense* (Owyhee clover) | On sparsely vegetated volcanic ash or tuff slopes in Wyoming big sagebrush communities. Thin rocky soils | Listed Endangered |

## E. WILDLIFE

### General Wildlife

Key big game populations in the District include elk, mule deer, pronghorn antelope, and bighorn sheep. Preferred use areas are habitats away from traveled roads, characterized by vegetation mosaics of timbered or brushy hiding cover and open sagebrush grassland foraging sites. Hiding and thermal cover is provided by timber stands, shrubs, aspen-willow riparian zones, and rugged terrain in all vegetation types. Water is an important factor in spring, summer, and fall and is provided by both natural and artificial sources throughout the project area. Large wildland fires in the Low-Elevation Shrub Steppe over the last 20 years have had negative impacts on habitat for mule deer and pronghorn. Loss of sagebrush cover and conversion to annual grassland has limited the amount of suitable winter range available for big game species.

Blue grouse (*Dendragapus obscurus*), Greater sage-grouse (*Centrocercus urophasianus,)* ruffed grouse (*Bonasa umbrellas*), gray partridge (P*erdix perdix*), wild turkey (*Meleagris gallopavo*), ring-necked pheasant (*Phasianus colchicus*), and chukar partridge (*Alectoris chukar*) are the primary upland game species inhabiting all of the vegetation types found on the public lands throughout the project area. Ring-necked pheasants exist in low numbers on BLM-administered lands primarily within the BLM/agriculture land interface. Wild turkeys have recently (within the last ten years) been re-introduced in Baker Resource Area. Chukar partridge are present throughout the lower elevations of the project area, occupying the Low- and Mid-Elevation Shrub Steppe, Riparian, Annual Grass, and Perennial Grass vegetation types.

**Raptors**

A variety of birds of prey (raptors) can be found throughout the District, including the northern goshawk (*Accipiter gentilis*), peregrine falcon (*Falco peregrinus anatum*), prairie falcon (*Falco mexicanus*), flammulated owl (*Otus flammeolus*), and ferruginous hawk (*Buteo regalis*). The greatest threat to raptors within the lower elevation sagebrush-steppe habitats throughout the District is the loss of native shrubs from wildfires and the subsequent invasion of noxious and invasive weeds that have adversely impacted prey populations. Primary raptor prey species, Townsend's ground squirrels (*Spermophilus townsendii*), black-tailed jackrabbits (*Lepus californicus*), and deer mice (*Peromyscus maniculatus*) are closely tied to shrub-dominated vegetation. Plant communities altered by wildfire, soil erosion, and exotic plant invasions are not able to support the density of certain prey species needed to sustain raptor populations.

**Neotropical Birds**

A diverse number of neotropical birds occupy all habitat types on a seasonal basis. There is some short-grass habitat occupied by long-billed curlew (*Numenius americanus)*. At lower elevations, these habitats generally consist of Wyoming big sagebrush and salt desert shrub habitats that have burned and are now dominated by invasive annual grasses, or seeded to crested wheatgrass. Curlews are also occasionally observed nesting at mid-elevations in recent burns, low sagebrush, and meadow complexes. Habitat for this species has actually increased over the last several decades along with the increased size and frequency of fires that has resulted in conversion of large areas of shrub-steppe to grasslands.

A large number of other species including a variety of mammalian predators; small mammals including bats, shrews, rodents, rabbits, and hares; waterfowl; non-native game birds; and a variety of reptiles and amphibians also occur throughout the District. A diversity of neotropical migrating birds; and other ground-nesting birds that rely on Wyoming big and basin big sagebrush are also present in varying numbers.

## Special Status Terrestrial Wildlife

BLM SSS include ESA listed, proposed and candidate species, and BLM sensitive species. Listed and proposed species may also have ESA designated or proposed critical habitat. The policy of the BLM is to conserve ESA listed, candidate, and proposed threatened and endangered species and their habitats, and not contribute to the need to list these species.

### Bald Eagle

The bald eagle is a federal threatened species that winters along the Snake, Malheur, and Owyhee Rivers, but may be found in the Vale District at any time of the year. Winter roosting habitats consisting of cottonwood stands and cliffs make up important habitat on the district.

Bald Eagles live near large bodies of open water and are found over most of North America, from Alaska and Canada to northern Mexico. About half of the world's 70,000 bald eagles live in Alaska. There are approximately 450 nesting pairs of bald eagles in Oregon. Bald Eagles that reside in the northern U. S. and Canada migrate to the warmer southern climates of the U. S. during the winter to obtain easier access to food, especially fish.

Strong endangered species and environmental protection laws, as well as active private, state and federal conservation efforts, have brought back the U.S.A.'s Bald Eagle population from the edge of extinction. There are now over 5,000 nesting pairs and 20,000 total birds in the lower 48 states.

### Canada Lynx

The Canada Lynx was first listed as a threatened species on March 24, 2000. The lynx is listed in Oregon and potential habitat is present in the Baker Resource Area.

The Canada lynx (*Lynx canadensis*), the only lynx in North America, is a rare forest-dwelling cat of northern latitudes. It feeds primarily on snowshoe hares (*Lepis americanus)* but also will prey on small mammals and birds. Its range extends from Alaska, throughout much of Canada, to the boreal forests in the northeastern United States, the Great Lakes, the Rocky Mountains and the Cascade Mountains.

Within the contiguous United States, the lynx's range extends into different regions that are separated from each other by ecological barriers consisting of unsuitable lynx habitat.

### Greater Sage-grouse

The Greater sage-grouse (*Centrocercus urophasianus)* is a BLM sensitive species that recently underwent a formal status review to determine if it was warranted for listing under the Endangered Species Act. During the review, the Service considered all the available scientific and commercial information on greater sage-grouse and

their habitats. In January of 2005 the US Fish and Wildlife Service determined that the species will not be listed under the Endangered Species Act at this time.

Current greater sage-grouse populations are distributed from north-central Oregon, southern Idaho, and southern Alberta and Saskatchewan, south to eastern California, and into extreme western North and South Dakota. Isolated populations also occur in eastern Washington.

Sage-grouse are obligate residents of the sagebrush ecosystem, and usually inhabit sagebrush-grassland or juniper-sagebrush-grassland communities (WSSGC 1974; WSSGC 1982). Sage-grouse occur throughout the range of big sagebrush, except on the periphery of big sagebrush distribution or in areas where it has been eliminated. Successful nesting and brood-rearing are dependent upon the presence of diverse perennial grasses, key forbs and sagebrush that provide cover and forage.

**Pygmy Rabbit**

The pygmy rabbit is a BLM assessment species that occurs throughout the Great Basin. The population status is poorly understood. The pygmy rabbit is a sagebrush obligate and preferred habitat is comprised of a variety of big sagebrush subspecies, typically in areas of deep soils.

**Bighorn Sheep**

The California bighorn sheep (*Ovis Canadensis californiana)* was reintroduced to the District during the 1960s. California bighorn sheep inhabit canyon areas along the Owyhee, Burnt and Malheur Rivers. The Rocky Mountain Bighorm Sheep (*Ovis Canadensis Canadensis)* is located along the Snake River in the Baker Resource Area and is a bureau tracking species.

## F. FISHERIES & AQUATIC SPECIES

### General Fisheries

### Coldwater Fish

Indigenous, coldwater fishes include bull trout (*Salvelinus confluentus)*, Lahontan cutthroat (*Oncorhynchus clarki henshawi)*, redband trout (*Oncorhynchus mykiss gairdneri)*, mountain whitefish (*Prosopium williamsoni*), sculpins (*Cottus* spp.), white sturgeon (*Acipenser transmontanus*), and others. White sturgeon is an important game fish that is found in the Snake River. Introduced, coastal rainbow trout (*O. m. irideus*) have been stocked by ODFW in some perennial streams throughout the planning area and hybridized with native redband and Lahontan cutthroat trout. Non-native brook trout (*Salvelinus fontinalis*) and brown trout (*Salmo trutta)* are found in a few streams on the District and will hybridize with native bull trout. These exotic species prey on and compete with native trout for habitat and other resources.

### Warmwater Fish

Many reservoirs as well as the Snake, Malheur, and Owyhee Rivers, and the lower reaches of other drainages have populations of native and exotic, warmwater tolerant fishes. Native species include redside shiner (*Richardsonius balteatus*), largescale suckers (*Catostomus macrocheilus*), bridgelip suckers (*Catostomus columbianus*), and northern pikeminnow (*Ptychocheilus oregonensis*). Introduced species include smallmouth and largemouth bass (*Micropterus dolomieui* and *M. salmoides*), black crappie (*Pomoxis nigromaculatus*), channel catfish (*Ictalurus punctatus*), and others.

**Special Status Aquatic Wildlife**

**Columbian Spotted Frog**
The Great Basin population of the Columbian spotted frog is a candidate for ESA listing. Extensive surveys since 1993 have led to increases in the number of known spotted frog sites which tend to be isolated from each other by natural and human induced habitat disruptions. They generally occur at mid- to higher elevations in low gradient streams that contain numerous oxbows and pools, and in lakes and ponds in close proximity to suitable stream habitats. Springs also provide important overwinter hibernacula. In the Vale District they range from forested habitats in the Baker Resource Area to desert habitat in the Jordan and Malheur Resources Areas.

**FEDERALLY THREATENED AND ENDANGERED SPECIES**

**Chinook salmon**
Chinook salmon are listed as a threatened species within the Baker Resource Area. The Hells Canyon dam prevents passage of anadromous fish, including chinook salmon, and prevents salmon from reaching streams in the Malheur and Jordan areas. Chinook salmon are present in most of the larger streams within the Baker R.A.

Along the U.S. West Coast there are 17 distinct groups, or evolutionary significant units (ESU's), of chinook salmon. The ESUs that are present on the Vale District are the Snake River spring/summer chinook and Snake River fall chinook. They were listed as threatened in 1992.

**Steelhead**
Steelhead were listed as a threatened species in 1999. Steelhead are anadromous and, like chinook salmon, are not present in Malheur and Jordan Resource Areas. Steelhead are widespread throughout the Baker R.A. and are present in most of the streams that drain into the Columbia River below Hells Canyon Dam.

**Bull Trout**
The bull trout was listed as Threatened in 1999 (64 FR 58910). There are populations of bull trout in streams managed by the Malheur and Baker field offices.

Bull trout are members of the char subgroup of the Salmonidae family. In streams, bull trout grow to about four pounds while those in lake environments can weigh more than 20 pounds. Bull trout are opportunistic feeders, with food habits

primarily a function of size and life-history strategy.

Bull trout historically occurred in major river drainages in the Pacific Northwest, from the southern limits in the McCloud River in northern California and the Jarbidge River in Nevada, north to the headwaters of the Yukon River in Northwest Territories, Canada. In the Vale District bull trout occur in the Pine Creek, Grande Rhonde and North Fork Malheur River drainages.

**Lahontan Cutthroat Trout**

The Lahontan cutthroat trout was first listed on October 13, 1970. It is currently designated as Threatened in the entire range and occurs only in the Jordan Resource Area.

The Lahontan cutthroat trout is an inland subspecies of cutthroat trout belonging to the Salmonidae family. Like other cutthroat trout subspecies, Lahontan cutthroat trout is an obligatory stream spawner that spawns between April and July. Spawning depends upon stream flow, elevation, and water temperature. In the Vale District Lahontan cutthroat trout occupy 89 stream miles in the Jordan Resource Area.

**BLM Tracking Species**

**Redband Trout**

Native, inland Columbian Basin redband trout is a BLM tracking species. Inland redband trout are adapted to extremely harsh environments with extremes of temperature and flow, and hatchery rainbow may not be effective competitors and predators in these environments (Behnke 1992).

Redband trout inhabit many perennial streams in the District and in all three field offices.

## G. RECREATION

The District provides numerous and varied recreational opportunities including nature study, bird watching, natural and cultural resources sightseeing, horseback riding, hiking, hunting, biking, camping, fishing, water sports, and rock hounding, as well as motorized vehicle use. There are 43 developed recreation sites in the district.

### SPECIAL MANAGEMENT AREAS

#### 1. WILDERNESS AREAS

There is one wilderness area in the Baker Resource Area, McGraw Creek (969 acres). It is presently managed by the U.S. Forest Service under cooperative agreement

### 2. WILDERNESS STUDY AREAS

There are 35 (1,279,688) acres public land) Wilderness Study Areas (WSAs) on the District. WSAs must be managed in a manner so as not to impair their suitability for preservation and designation as Wilderness. ESR treatments in WSAs would be developed and evaluated under the guidelines found in the BLM Interim Management Policy and Guidelines for Lands under Wilderness Review (IMP) H-8550-1 and the Interagency Burned Area ESR Handbook.

### 3. WILD AND SCENIC RIVERS

Federal land management agencies are responsible for evaluating certain rivers to determine suitability for inclusion in the National Wild and Scenic Rivers System. The agencies provide protection by preparing recommendations for suitable rivers to be designated and by taking immediate action to protect them. In the interim, the rivers are treated as though they were components of the National System until acted upon by Congress, and must be managed in a manner so as not to impair their suitability for inclusion in the National Wild and Scenic River System. There are six designated WSR's and three administratively suitable study rivers in the district.

### 4. OTHER SPECIAL MANAGEMENT AREAS

Areas of Critical Environmental Concern (ACECs) are areas where special management attention is required to: 1) protect and prevent irreparable damage to important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes, 2) protect human life and safety from natural hazards, 3) preserve natural processes that dominate the landscape for the primary purpose of research and education. Some ACECs are also designated as Research Natural Areas (RNAs). There are 37 ACECs in the District.

## H. VISUAL RESOURCES

Public lands have a variety of visual values. Visual values are identified through the VRM Inventory (Manual Section 8410) and are considered with other resource values in the resource management planning process. Visual management objectives are established in conformance with the land use allocations. These area specific objectives provide the standards for planning, designing, and evaluating future management projects.

VRM Class I is the most restrictive category and applies to BLM special administration designations where public interest and BLM management call for the preservation of pristine landscapes such as designated Wilderness and WSAs, Wild and Scenic Rivers, or Visual/Scenic ACECs, and visible sections of the Oregon NHT (National Historic Trail). Most of the Class I areas in the District are in or adjacent to the deeply incised canyons of the Snake and Owyhee, river systems.

VRM Classes II to IV would allow increasingly higher levels of landscape alteration. Management activities in Class II areas may be seen but should not attract the attention of the casual observer, and would repeat the basic elements of form, line, color, texture, and scale found in the predominant natural features of the characteristic landscape.

Management activities may attract attention in Class III areas but would not dominate the view of the casual observer. Management activities in Class IV may be a major modification of the existing landscape character that dominates the view and is the major focus of viewer attention; however, every attempt would be made to minimize the impact of these activities through careful location, minimal disturbance, and repeating the basic elements.

## I. CULTURAL & PALEONTOLOGICAL RESOURCES

A cultural resource is generally defined by Federal agencies as any location of human activity that occurred at least 50 years ago. Cultural Resources are identified through field survey, historic documentation, or oral evidence. Prehistoric or pre-contact cultural resources in the Vale District include lithic scatters, rock shelters, pithouses, petroglyphs, pictographs, hearths and rock features (cairn, alignments). Historic cultural resources include buildings and building ruins, mine sites, wagon roads, railroad grades, irrigation ditches and associated structures, dams and archaeological deposits. American Indian traditional use areas are a special category of cultural resources. Some cultural resources may be less than 50 years old but have cultural and religious importance to American Indian tribes or paramount historic interest to the public. Heritage resources may be eligible for the National Register of Historic Places at the local, regional, or national level.

Across the Vale District there are more than 1500 cultural resource sites recorded and probably more that have not been recorded because many scattered parcels and large blocks of the District have not been surveyed. Also the Vale District has several properties listed on the National Register of Historic Places including the Oregon National Historic Trail, the Snake River Nez Perce National Register Archaeological District and the Birch Creek Ranch Rural Landscape.

Several Tribes have treaty rights or traditional interests in the area. These include the Nez Perce, Confederated Tribes of the Umatilla Indian Reservation, Burns Paiute, Confederated Tribes of the Warm Springs Reservation, Fort McDermitt Paiute, Shoshone-Paiute Tribes and Shoshone-Bannock Tribes.

Fossil floral and faunal resources are located in areas where sedimentary deposits are present. Silts and sandstones deposited under water in slow moving rivers or stagnant lakes often contain fossil deposits. Shales derived from mud flows deposited by rivers may contain organic material as well as fossils. Limestone deposits may contain fossils ranging from microscopic flora and fauna to larger sea creatures. Across the Vale District a wide variety of fossil resources have been located.

Pioneering work in the field of paleontology was conducted by J.A Shotwell in the

late 1950s and early 1960s. During several field seasons, a field crew from the Museum of Natural History, University of Oregon studied Miocene, Pliocene and Late Tertiary mammals. Fossil localities are noted for diversity and abundance bearing both small rodent specimens as well as large specimens such as camel, horse, turtle and sloth and later species such as mammoth, mastodon and bison.

### J. GRAZING MANAGEMENT

Livestock grazing began on the Lower Snake River Plains as early as 1700, when the Native Americans brought horses into the northern Great Basin. With the opening of the Oregon Trail and subsequent settlement, uncontrolled grazing with large numbers of cattle, sheep, and horses occurred. This uncontrolled grazing led to significant resource damage in many areas in the northern Great Basin. In 1934, the passage of the Taylor Grazing Act occurred. The passage of this act resolved much of the uncontrolled grazing issues occurring on the public lands by the creation of grazing districts. Today, livestock grazing occurs through grazing permits which contain not only mandatory terms and conditions, but also allotment specific terms and conditions to meet resource objectives identified in Land Use Plans. Issues that can affect many operators include forage accessibility, annual fluctuations of forage production, lack of permanent water, loss of forage and short term loss of grazing use, and loss of perennial plant communities due to disturbances such as wildland fire.

## IV. ENVIRONMENTAL CONSEQUENCES

This chapter describes the predicted environmental consequences that would result from implementing the No Action Alternative and the Proposed Action described in Chapter II.

The impact analysis follows the same general outline for resources discussed in Chapter III, Affected Environment. It addresses direct, indirect, and cumulative effects on those aspects of the physical, biological, and human environments most likely to be affected. Resources that are unlikely to be affected or only minimally affected are discussed only briefly, and resources that would have similar affects were combined.

### NO ACTION ALTERNATIVE

The No Action Alternative would include all of the actions in the Proposed Action. The same environmental effects would occur under the No Action Alternative, as those described under the Proposed Action, except that individual EAs would have to be prepared for ESR treatments. Potential delays may increase the likelihood of missing critical implementation timelines. As a result, site objectives may not be met in a timely manner, and indirect post-wildfire effects such as increased erosion and proliferation of noxious and invasive weeds may increase.

## PROPOSED ACTION

### A. SOILS

After a fire, much of the burned area soil would be exposed and prone to wind and water erosion. If surface runoff occurs before ground cover becomes re-established, erosion would occur. ESR treatments would be prescribed on a site-specific basis. All seeding methods have a low probability of reducing erosion the first year because most of the benefits of the seeding occur after germination and root development. Therefore, the benefits of seeding are considered to be long-term. Once the area is rehabilitated and ground cover becomes re-established, soil erosion would be similar to that of the pre-burn landscape.

Mechanical seedbed preparation, seeding, seed covering, weed control, fencing, and off-road vehicle traffic associated with ESR treatments could create some short-term impacts to the remaining vegetation and to the soil surface, such as increasing the rate of wind erosion in sandy soils or sealing the soil surface in clay soils. The no-till drill or a modified rangeland drill with depth bands and hand seeding would have less short-term soil impacts than other mechanical methods used to prepare soil for seeding. Chaining, standard rangeland drilling, and harrowing would have the highest short-term soil impacts because they would expose the soil surface to wind erosion, and they would do the most damage to remaining vegetation.

Despite a variety of potential soil impacts from the mechanical treatments, the long-term benefits from re-establishing perennial vegetation would quickly out-weigh the short term disturbances because re-vegetation would provide long term soil stability and water quality. For example, drilled treatments exhibit higher infiltration rates and less surface runoff and soil erosion during precipitation events than untreated sites. In addition, controlling annual grasses and establishing native or desirable non-native vegetation would result in more natural fire cycles that are less damaging to soil and produce less erosion in the long-term.

The no-till drill or modified rangeland drill with depth bands would be preferred for areas with good microbiotic crust cover to protect the remaining crust. In areas with poor crust cover the other mechanical methods (e.g. rangeland drill, harrowing, and chaining) may be used because improving the crust (by preventing cheatgrass invasion and encouraging stable bunchgrass or bunchgrass/shrub communities) in the long-term would be an important objective. Good microbiotic crust cover would improve hydrology, minimize erosion, increase plant community structure and biological diversity, decrease the likelihood for cheatgrass invasion, and would help to re-establish more normal fire cycles.

Hillslope treatments (low stage check dams, straw bales and wattles, contour felled logs) are used to reduce overland flow, trap sediment and monitor erosion. Installation causes ground disturbance in the immediate area around the structure.

In-channel sediment storage structures such as check dams would be used sparingly in small, ephemeral and naturally intermittent channels only, because hillslope erosion control treatments that prevent sediment delivery to waterways are generally more effective, and there is always a risk that sediment storage structures would fail and cause more damage to channels, aquatic habitat, and special status aquatic species when stored sediments are released (Robichaud *et al.* 2000; Rosgen 1996). Straw bale check dams, gravel bags, straw wattles, and other structures that capture large material, allow fine sediment to pass and decompose over time, would have the lowest potential for channel damaging failures.

## B. WATER, FLOODPLAINS/WETLANDS/RIPARIAN ZONES

The effects to water resources are related to upland, hillslope, and channel treatment effects discussed in the previous Soils Section. Soils exposed after a fire are prone to erosion. Impairment to water quality could happen if a large runoff event occurs before ground cover becomes reestablished, whether or not an area has had ESR treatment. Seedbed preparation and mechanical seeding generally result in increased infiltration and less runoff. Sediment detention structures, such as straw wattles interrupt overland flow, reduce runoff energy, reduce rill and gully formation, and trap sediment that may otherwise be transported downslope.

Short-term indirect effects would occur if soil particles from mechanized treatment areas are transported downslope to a stream. Long-term indirect effects from upland treatments include improved hydrologic function of the watershed as the site becomes revegetated with desirable species. The ESR treatments for soil stabilization, road and trail drainage improvements, and channel stability would protect beneficial uses by minimizing erosion and post-fire sediment delivery to stream channels.

Design features and BMPs (Best Management Practices) for working in riparian areas and aquatic environments would minimize the direct affects to water quality. Direct, short-term impacts to water quality could occur during facilities maintenance, such as culvert removal and replacement, if sediment enters into a flowing stream.

Riparian tree and shrub seedlings or herbaceous plugs provide long-term canopy cover to shade streams from direct solar radiation or provide streambank stability to maintain water quality and protect beneficial uses.

Proper selection, timing, and application of herbicides for prescribed weed treatments would minimize the risk that these substances inadvertently enter aquatic ecosystems. Direct effects to water quality could occur if chemicals were accidentally spilled into the water. Over time, noxious/invasive weed control would result in healthier watersheds by reducing competition with desirable species that provide greater soil stability.

Overall impacts to riparian areas from treatment methods would be minimal due to the specific design features. Riparian and aquatic environments would realize long-

term benefits from upland, near-channel, and in-channel treatments that are designed to stabilize soil, minimize rill and gully erosion, and protect streambanks.

Short-term soil impacts associated with riparian or in-channel bioengineering techniques (e.g. seeding, planting woody or herbaceous riparian species, willow wattles, whole tree felling) or silt fencing include a localized, increased risk of erosion until the site becomes revegetated. Bioengineering would improve riparian and channel process in the long-term, channel stability would be maintained, and aquatic habitat would be improved or protected.

Fences or closures would be used to protect riparian areas from livestock, wild horses. There would be some short-term vegetative impacts associated with fence construction or reconstruction, but riparian areas would be quickly revegetated due to available soil moisture and protection from grazing impacts.

## C. AIR

Soil disturbing ESR activities such as mechanical seedbed preparation, seeding, seed cover, and weed treatments may affect air quality for a short duration. Re-establishing vegetative cover would benefit air quality in the long-term because soil that is at risk of erosion due to fire and ash would be stabilized and would not become airborne as dust storms. Establishment of desirable native and non-native vegetation would restore more natural fire regimes and reduce the long-term air quality impacts associated with large-scale, high intensity fires fueled by annual grasses.

The herbicide label restrictions, regulations imposed by the NW Area Noxious Weed Control Program, the proposed design criteria, and public notification would protect human health during aerial herbicide applications to the extent practicable.

## D. VEGETATION

### GENERAL VEGETATION

Natural recovery would contribute to the recovery of the remaining vegetation and would benefit the plant community structure. Mechanical seedbed preparation, seeding, seed covering, weed control, fencing, and off-road vehicle traffic associated with ESR treatments could create some short-term impacts to remaining vegetation. The no-till drill or rangeland drill with depth bands, and hand seeding would be less damaging to existing vegetation than other mechanical methods used to prepare soil for seeding. Chaining, standard rangeland drilling, and harrowing would have the highest short-term impacts.

The short-term detrimental effects of mechanical seedbed preparation, planting, and covering seed would be minimized by the design features and would be vastly out-weighed by the long-term benefits such as enhanced site stability and a more diverse perennial plant community. Other beneficial effects expected to occur with

implementation of the Proposed Action would be: 1) improving and restoring the biodiversity of native vegetation, 2) restoring quality habitat for wildlife, 3) protecting sensitive plant and animal habitat, and 4) contributing toward the return of a more natural fire cycle.

Aerial seeding alone would have no short-term impact to vegetation.

Protective fences and/or deferred livestock grazing would protect recovering sites for at least two growing seasons after the fire, or until vegetation is established adequately to withstand grazing. Some short-term vegetative impacts would be associated with fence construction or reconstruction primarily from off-road vehicle traffic and brush clearing, but these impacts would be site-specific and minimal compared to the long-term vegetation benefit. Protective fencing would also promote recovery of microbiotic crusts.

Areas currently heavily infested with cheatgrass would benefit from seedbed preparation by herbicide application and integrated noxious weed management which would greatly enhance the potential for site rehabilitation. Herbicide application would be the most effective and aggressive treatment method for quickly accessing and treating large noxious and invasive weed-infested areas. By implementing design features, any impacts to remaining vegetation would be minimized. Over time, desired vegetation would benefit from reductions in weed competition and contribute toward a more natural fire cycle.

### SPECIAL STATUS Species (SSS)

Clearances for SSS plants and their habitats would be conducted prior to implementation of all ground disturbing activities. SSS plant locations would be avoided or impacts would be minimized. Utilizing design features and recognizing individual SSS needs would contribute towards the recovery of the SSS species and their habitats over time. Proposed actions would contribute to the return of a more natural fire cycle over time and enhance SSS habitats.

## E. WILDLIFE

### GENERAL WILDLIFE

ESR treatments would not be expected to adversely affect pronghorn antelope, mule deer, or elk. Adverse impacts due to treatment activities would be expected to be temporary, and minor. Beneficial effects would increase incrementally, over time, as long as weed-infested areas recover to more natural conditions and the fire cycle returns to more natural conditions as a result of treatments.

Habitat values for shrub dependent species would be low during revegetation. Recovery of low elevation areas would be slow while higher elevation areas would

occur more rapidly. Once the burned areas are successfully re-vegetated, wildlife habitat values would improve by providing palatable forage and a diversity of young perennial grass, forb, and shrub species. If successful over time, mosaics of mature shrubs and trees would provide thermal and hiding cover, and winter forage. Protective fences would protect recovering sites from livestock for two growing seasons or until site objectives have been met. The design features would ensure that the fences are visible to wildlife and would only minimally inhibit wildlife movements.

**Migratory Birds**
Revegetation with a variety of native species, in addition to noxious and invasive weed treatments that maintain or improve migratory bird nesting habitat would benefit this group in the long-term. Ground-disturbing mechanical treatments such as rangeland drill, no-till drill, press wheel, land imprinter, cultipacker, chaining, and harrowing implemented during the spring-early summer may disturb ground nesting birds in the short-term, this would be minimal as these treatments are normally implemented in the fall following the fire event.

**Other Wildlife**
The potentially adverse impacts of ESR treatments on non-game mammals, waterfowl, non-native game birds, amphibians, and reptiles are expected to be relatively minor and short-lived, and would be more than offset by long-term benefits of ESR treatments. Adverse impacts during treatment implementation would include temporary disturbance or displacements of mobile wildlife.

Recovery of weed-infested areas would have benefits similar to those described for big game, but would provide an even greater benefit to smaller, ground dwelling species such as reptiles, amphibians, and small mammals whose movements can be restricted by dense stands of cheatgrass or other invasive species. Many of these species also have very small home ranges and would be eliminated from large areas of infestation.

Wildlife species that rely on low elevation shrub communities (i.e. Wyoming big sagebrush and salt desert shrub) and riparian areas would benefit most since these areas have been the most impacted by recent weed invasions and large scale, high intensity fires.

**Greater Sage-grouse and Other Sagebrush Obligate Species**
Sagebrush provides important habitat for sage-grouse, sage sparrows, Brewer's sparrows, a diversity of neotropical migrants, and other species including ground-nesters, and tend to reestablish slowly following fire. Therefore, these habitat types would be a high priority for ESR treatments such as seedbed preparation, seeding with native vegetation, seed covering, and weed control.

Sage-grouse and other birds that occur in big sagebrush habitat could be impacted by ground-disturbing ESR treatments such as harrowing, disking, cultipacker, imprinter,

chaining, vehicle traffic, and fencing. These impacts would be mostly in the form of temporary displacement of animals from adjacent unburned habitats or disruption of movements between habitats. The impacts would be reduced by design features that preclude these ground disturbing activities during the critical breeding and nesting seasons.

Treatments which incorporate design features for the use of herbicides in sage-grouse habitats would minimize adverse affects on the species. Treatments would not occur during breeding and nesting season.

Vegetation ESR treatments in greater sage-grouse habitat would consider the guidance found in the Greater Sage-grouse Conservation Assessment and Strategy for Oregon, *Guidelines to Manage Sage-grouse Populations and Their Habitats* (Connelly *et al.* 2000), and *Management Considerations for Sagebrush (Artemisia) in the Western United States* (USDI BLM 2002) to minimize the short-term impacts and maximize the long-term benefits of ESR treatments.

Weed treatments, revegetation, and deferred livestock grazing would benefit sage-grouse habitat in the long-term by establishment of a suitable habitat along with an overall increase in quality and quantity of food and cover.

## F. FISHERIES & AQUATIC WILDLIFE

### GENERAL FISHERIES

The potentially adverse impacts of ESR treatments would be minimized by incorporating design features, and are expected to be relatively minor and short-lived. Adverse impacts during treatment implementation would include temporary disturbance of wetland, riparian, or aquatic habitats. Beneficial affects include re-vegetating burned areas sooner than allowed to occur naturally, resulting in improved water quality by maintaining bank stability, reducing sediment loads, maintaining water temperatures; and diminishing the risk of post-fire flooding and landslides. The long term benefits of ESR treatments would out-weigh the short term effects of ESR treatments.

The ESR herbicide application design features would minimize impacts to riparian vegetation and water quality. Post-fire weeds could spread from the initial area of disturbances and eventually dominate a riparian area if left untreated. Recovery of weed-infested areas and re-establishment of desirable riparian species would provide better soil and water protection, insect production, stream canopy cover, bank protection, and large woody debris recruitment potential to benefit aquatic wildlife.

## G. RECREATION

Short-term impacts to recreation would occur if burned areas require temporary closure to the public to prevent resource damage such as scarring, accelerated erosion, and damage to remnant vegetation, or to allow ESR treatments such as seedings to become established. In developed or high use undeveloped areas, this

would result in reduced recreational opportunities and could result in increased use in other areas. ESR treatments that stabilize soil and promote vegetative recovery, including temporary closures would benefit recreational, natural, and cultural resources in the long-term.

Aesthetic properties of the landscape would be changed as a result of ESR treatments in both the short- and long-term, and could change recreational use patterns. In the long-term, treatment of previously degraded areas (e.g. annual grassland) would result in enhanced visual quality (see below) and decrease the risk of fire associated with recreational use. In the long-term, the potential impacts to recreational resources would be reduced and future recreational experiences would be improved as a result of ESR treatments.

Repair and/or reconstruction of damaged recreation facilities would benefit the public by reestablishing minor structures damaged by wildland fire. Fire damage may cause damage to an areas value for wildlife viewing and other dispersed recreational uses. Stabilization and rehabilitation measures would accelerate a recovery of those values.

Herbicide application re-entry notices, as outlined on herbicide use labels, would be posted in all spray areas as necessary. All herbicide applications would follow strict design features to protect potable water sources.

## SPECIAL MANAGEMENT AREAS

### ACECs and Wild and Scenic Rivers

Natural recovery would have no adverse impact on SMAs, including ACECs and Wild and Scenic river segments.

Impacts to ACECs and Wild and Scenic Rivers would be minimized by utilizing design features to protect and maintain the water quality, viewsheds, airsheds, plant and animal habitat, and recreational opportunities by preventing soil erosion, water quality degradation, spread of noxious and invasive weeds; and maintaining vegetative cover, native ecosystems, and pristine landscapes.

Mechanical soil treatments such as rangeland drills, no-till drills, press wheels, and imprinters may leave visual rows or uniform planting patterns on the landscape and would only be used in these SMAs if the rows can be created in an irregular pattern to minimize unnatural patterns to: 1) maintain the suitability of proposed Wild and Scenic river segments for inclusion in the National Wild and Scenic River System, 2) protect and prevent irreparable damage to the important historic, cultural, or scenic values, fish and wildlife resources, or other natural systems or processes in ACECs, and 3) maintain and protect the outstandingly remarkable values in designated Wild and Scenic River corridors, and the other VRM Class I viewsheds.

**Wilderness Study Areas**
Natural recovery would have no adverse impact on WSAs. However, short-term visual impacts would result from the presence of temporary protective fencing. Fencing types, modifications and installation/removal methods would be employed consistent with guidance outlined in the *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (IMP) H-8550-1 to protect wilderness values and maintain a WSA's suitability for wilderness designation. The recovery of native vegetation and removal of protective fencing would enhance wilderness values in the long-term.

Impacts of ESR treatments in WSAs would be mitigated by utilizing the NFESRP design features, and adherence to guidance outlined in the *Interim Management Policy and Guidelines for Lands Under Wilderness Review* (IMP) H-8550-1. The use of hand or broadcast seeding without seed covering treatments due to WSA status can reduce the effectiveness of the seeding and may result in increased soil erosion and the spread of noxious and invasive species. The use of the least intrusive/lowest impact methods of seedbed preparation, seeding, and seed covering treatments to stabilize soils, control noxious and invasive weeds could result in short-term loss of vegetative cover and soil surface disturbance.

Application of both herbicide and seeding treatments would result in some temporary loss of wilderness values through short-term equipment use and loss of vegetation cover. Short-term visual impacts would also result from the presence of temporary protective fencing. ESR treatments in the long-term would enhance wilderness values by stabilizing soils and replacing annual grassland with plant communities that would be functionally and structurally similar to native sagebrush-steppe.

Seed cover methods have varying degrees of impact to the wilderness resource. The primary impact would be visual based on the selected seed cover method. The use of a rangeland drill or no till-drill to directly apply seed would give the seed the highest probability for germination because of optimum seed coverage. Even with the design feature of irregular planting margins the use of a drill would have a visual impact. The no-till drill would be less visually impacting because the drill row would be less discernible.

Erosion control structures would have a short-term visual impact to wilderness values. The use of erosion control to stabilize watersheds and to minimize the risk of degrading water quality would benefit WSAs in the long-term by preventing soil erosion and water quality degradation to protect, maintain, or improve water quality, wildlife habitat, and SSS habitats.

## H. VISUAL RESOURCES

Impacts to visual resources as a result of the Proposed Action could be relatively

high immediately following mechanical treatments such as drilling, chaining, or harrowing. There are some high visual sensitivity areas in the Class III and IV VRM areas (e.g. areas adjacent to highways or other heavily-traveled roads) where mechanical disturbances could create high levels of contrast to the surrounding landscapes, and temporarily degrade scenic quality. Over the long-term, as seeded vegetation becomes successfully established, the levels of contrast would be reduced or improved as a result of ESR treatments.

ESR treatments would be applied to preserve the visual qualities of the landscape in SMAs (e.g. WSAs, Wild and Scenic Rivers, ACECs, VRM Class I Areas). BMPs are normally applied to minimize the visual impacts of management activities through careful location, minimal disturbance, and consideration of visual contrasts with the surrounding landscape. In addition, potential ESR impacts would be mitigated by utilizing NFESRP design features, and adherence to guidance outlined in the *Interim Management Policy and Guidelines for Lands under Wilderness Review* (IMP) H-8550 in WSAs. There would be short-term impacts to visual qualities due to soils disturbance associated with some seeding treatments and the visibility of slope stabilization treatments. In the long-term, ESR treatments would maintain visual quality by preventing erosion and maintaining native vegetation.

## I. CULTURAL & PALENTOLOGICAL RESOURCES

Inventories for cultural resources and consultation with SHPOs and Tribes would identify appropriate site specific treatment measures for ESR. Cultural resource field inventories would be conducted under the direction and supervision of cultural resource staff specialists. Identified cultural or paleontological sites would be buffered to avoid most direct ground disturbing actions, such as high impact seeding, in-channel structures, and slope contour erosion control measures. Seeding of these sites would facilitate re-establishment of vegetation to minimize post fire effects on exposed sites that are vulnerable to accelerated soil erosion, perennial cover depletion, or illegal artifact removal. Soil stabilization treatments in the vicinity of sites would be beneficial because such treatments minimize potential soil erosion that could have an indirect effect at the site location. Livestock grazing closures, protective fencing, and vehicle access restrictions through road/trail closures would benefit cultural and paleontological resources by reducing potential impacts from livestock trailing and congregation or vehicle tracking. Periodic law enforcement patrols to monitor and enforce closures in areas with sensitive cultural resources would discourage illegal artifact collecting.

Hand and aerial seed application have little potential for ground disturbance on cultural sites, and would be the typical method of seeding on level terrain. However, some identified sites could benefit from the application of seed using low impact methods such as hand raking or hand planting seedlings, shallow tine harrowing pulled by an ATV, or no-till drilling, to ensure seed contact with the soil and thereby successful vegetation re-establishment to forestall on site erosion. The amount of surface disturbance to sites using such methods is minimal, since it would be limited

to the top one or two inches of the soil, which is a zone of active natural disturbance. Use of drag chains, deep harrows, cultipackers, crawler tractors, imprinters, and rangeland till drills would be avoided unless the potential effects have been addressed in consultation with SHPOs and Tribes, and there is a compelling reason to use such equipment for seeding over site areas. Emphasizing native plant species for re-vegetation in culturally sensitive landscapes would be beneficial for the retention of the visual qualities of the characteristic landscape, and would help protect cultural resources from future fire impacts.

Any structural or bioengineered stabilization or rehabilitation proposed for ESR on specific archaeological or historic sites would be developed on a case-by-case basis, in consultation with the SHPOs and Tribes. Examples of such treatments may include application of geotextile, cover fill and/or seeding to stabilize a damaged and highly vulnerable archaeological site; or replacement of structural elements on burned historic buildings. These measures are designed to protect historic properties damaged by fire over the long term.

Monitoring for effectiveness of treatments at sites would follow the program identified in the proposed action design features, and would ensure that site specific treatments are properly implemented and maintained for up to three years following fire control.

Fossil flora and faunal localities, which are inherently fragile, would be identified prior to any surface disturbing activity. These localities would be flagged and avoided by all project activities.

## J. GRAZING MANAGEMENT

By policy, areas burned by wildfire would be closed to livestock grazing for two grazing seasons regardless of whether ESR treatments are applied. There could be some short-term economic loss to livestock permittees as a result of these closures. Closures and/or restrictions would be in effect for two growing seasons, or until site objectives for soil stabilization and vegetation have been met. During these time frames, permittees would have to locate other feed sources such as feeding their livestock hay on their private grounds, leasing other pastures, and/or the possibility of having to reduce livestock numbers until closed areas are available for livestock grazing. Temporary fencing would allow areas within a pasture that are not burned to remain available for livestock grazing reducing economic impacts to permittees where fencing is feasible.

ESR treatments would prevent noxious weed invasion and/or replace poor quality rangelands, such as those dominated by cheatgrass with high quality perennial community types; improve the ecological health of the rangeland; and contribute toward reducing large-scale, high intensity fires. These improvements would result in increased rangeland health and stability in the long-term.

### CUMULATIVE IMPACTS

On the Vale District, wildfire has burned 1.284 million acres since 1980, a yearly average of 53,400 acres. Since 1994, 41 Emergency Stabilization and/or Rehabilitation (ESR) plans, covering over 400,000 acres were prepared by the district and funded for various stabilization and rehabilitation activities. The ESR program would contribute toward reversing the trend of higher frequency and higher intensity fires by converting annual grasslands back to fire-adapted, native plant species and/or desirable non-native species. Special status and non-status plants and animals would be protected by the general and species-specific design features, and would benefit from a return to more natural fire cycles and improved ecosystem function including better habitat/population connectivity, migratory corridors, habitat structure, forage, and stability. Prey species would directly benefit from ESR treatments, and predator species would benefit indirectly when prey species populations rebound.

There would be a short-term loss of forage for livestock and/or wild horses as a result of the fire and during periods of deferred grazing. In the long-term, soil would be protected and more diverse, palatable and fire-resistant vegetation would be established which would benefit livestock, wild horses, and wildlife.

The cumulative improvements that result from ESR treatments would also help protect non-living resources and communities from future fire impacts.

## V. Participating Staff

| | |
|---|---|
| Bob Alward | Outdoor Recreation Planner |
| Steve Christensen | Range Conservationist |
| Tom Dabbs | Malheur Resource Area Field Manager |
| Ted Davis | Natural Resource Specialist |
| Randy Eyre | Planning and Environmental Coordinator |
| Roger Ferriel | Botanist |
| Jean Findley | Botanist |
| Tom Hilken | Natural Resource Specialist |
| Jim Johnson | Wildhorse Specialist |
| Brandon Knapton | Wildlife Biologist |
| Todd Kuck | Natural Resource Specialist |
| Mary Oman | Archaeologist |
| Dianne Pritchard | Archaeologist |
| Shaney Rockefeller | Soil Scientist |
| Garth Ross | Fisheries Biologist |
| Jon Sadowski | Wildlife Biologist |
| Lynne Silva | Weeds Specialist |
| Cynthia Tait | Fisheries Biologist |
| Mitch Thomas | Range Conservationist |
| Brian Watts | Fire Ecologist |

| | |
|---|---|
| Wayne Wetzel | Jordan Resource Area Field Manager |
| Penny Woods | Baker Resource Area Field Manager |

## VI. Agencies, Organizations and Individuals Consulted

A notice of the availability of this EA and opportunity to comment was sent to a mailing list of over 400 individuals, organizations, agencies and local, state and federal governments.

## VII. REFERENCES


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# VIII. LIST OF ACRONYMS

| | |
|---|---|
| **ACEC** | Area of Critical Environmental Concern |
| **BLM** | Bureau of Land Management |
| **BMP** | Best Management Practices |
| **EA** | Environmental Assessment |
| **ESA** | Endangered Species Act |
| **ESP** | Emergency Stabilization Plan |
| **ESR** | Emergency Stabilization and Rehabilitation |
| **NEPA** | National Environmental Policy Act |
| **NFESRP** | Normal Fire Emergency Stabilization and Rehabilitation Plan |
| **NHPA** | National Historic Preservation Act |
| **ONA** | Outstanding Natural Area |
| **RNA** | Research Natural Area |
| **RP** | Rehabilitation Plan |
| **SHPO** | State Historic Preservation Officer |
| **SMA** | Special Management Area |
| **SSS** | Special Status Species |
| **USDA** | United States Department of Agriculture |
| **USDI** | United States Department of the Interior |
| **USFWS** | U.S. Fish and Wildlife Service |
| **VRM** | Visual Resource Management |
| **WSA** | Wilderness Study Area |

## Appendix A: List of Commonly Used Species

### GRASSES

Barley (*Hordeum vulgare*)

Brome, mountain (*Bromus marginatus)*

Brome, smooth (*Bromus inermis*)

Dropseed, sand (*Sporobolus cryptandrus*)

Fescue, red (*Festuca rubra*)

Fescue, Idaho (*Festuca idahoensis*)

Needle-and-thread (*Heterostipa comata*)

Needlegrass, Thurber's (*Achnatherum thurberianum)*

Orchard grass (*Dactylis glomerata*)

Ricegrass, Indian (*Achnatherum hymenoides*)

Sacaton, alkali (*Sporobolus airoides*)

Sandberg's Bluegrass, (*Poa sandbergii*)

Squirreltail, big (*Elymus multisetus*)

Squirreltail, bottlebrush (*Elymus elymoides*)

Threeawn, purple (*Aristida purpurea*)

Wheatgrass, bluebunch (*Pseudoroegneria spicata*)

Wheatgrass, crested (*Agropyron cristatum*)

Wheatgrass, standard crested (*Agropyron desertorum*)

Wheatgrass, intermediate (*Thinopyrum intermedium*)

Wheatgrass, tall *(Thinopyrum intermedia ponticum)*

Wheatgrass, Siberian (*Agropyron fragile sibericum*)

Wheatgrass, slender (*Elymus trachycaulus* spp. *trachycaulus*)

Wheatgrass, Snake River (*Elymus wawawaiensis*)

Wheatgrass, streambank (*Elymus lanceolatus psammophilus*)

Wheatgrass, tall (*Elytrigia elongata*)

Wheatgrass, thickspike (*Elymus lanceolatus* spp. *lanceolatus*)

Wheatgrass, western (*Pascopyrum smithii)*

Wildrye, basin (*Leymus cinereus*)

Wildrye, beardless (*Leymus triticoides*)

Wildrye, Russian (*Psathyrostachys juncea*)

**FORBS**

Alfalfa (*Medicago sativa*)

Aster (*Aster* spp.)

Balsamroot, arrowleaf (*Balsamorhiza sagittata*)

Biscuitroot, Gray's *(Lomatium grayi)*

Biscuitroot nineleaf (*Lomatium triternatum*)

Burnet, small (*Sanguisorba minor*)

Buckwheat species *(Eriogonum* spp.*)*

Flax, blue (*Linum perenne*)

Flax, Lewis (*Linum perenne* ssp. *lewisii*)

Globemallow, gooseberryleaf (*Sphaeralcea grossulariifolia*)

Globemallow, white-stemmed (*Sphaeralcea munroana*)

Hawksbeard species *(Crepis* spp.*)*

Lupine species *(Lupinus* spp.*)*

Milkvetch, hermit (*Astragalus eremiticus*)

Milkvetch, hanging pod (*Astragalus filipes*)

Milkvetch, Pursh's (*Astragalus purshii*)

Onion, tapertip, (*Allium acuminatum*)

Penstemon, hot rock (*Penstemon deustus*)

Penstemon, sand-dune (*Penstemon accuminatus*)

Penstemon, sand-dune (*Penstemon accuminatus*)

Sainfoin (*Onobrychis viciifolia*)

Yarrow, western (*Achillea millefolium*)

**SHRUBS**

Bitterbrush, antelope (*Purshia tridentata*)

Budsage *(Artemisia spinescens)*

Buffaloberry, silver (*Shepherdia argentea*)

Cherry, bitter (*Prunus emarginata*)

Chokecherry (*Prunus virginiana*)

Currant, golden (*Ribes aureum*)

Greasewood *(Sarcobatus vermiculatus)*

Horsebrush, spineless *(Tetradymia canescens)*

Hopsage, spiny (*Grayia spinosa*)

Mahogany, curl-leaf mountain (*Cercocarpus ledifolius*)

Phlox species (*Phlox* spp.)

Rabbitbrush, rubber *(Ericameria nauseosa)*

Rabbitbrush, green *(Ericameria viscidiflora)*

Rose, wood's (*Rosa woodsii*)

Sagebrush, basin big (*Artemisia tridentata* spp. *tridentata*)

Sagebrush, black (*Artemisia nova*)

Sagebrush, low *(Artemisia arbuscula)*

Sagebrush, silver *(Artemisia cana)*

Sagebrush, mountain big (*Artemisia tridentata* spp. *vaseyana*)

Sagebrush, Wyoming big (*Artemisia tridentata* spp. *wyomingensis*)

Saltbush, fourwing (*Atriplex canescens*)

Saltbush, Gardner's (*Atriplex gardneri*)

Serviceberry, Saskatoon (*Amelanchier alnifolia*)

Serviceberry, Utah (*Amelanchier utahensis*)

Shadscale (*Atriplex confertifolia*)

Snowberry, common (*Symphoricarpos albus*)

Snowberry, mountain (*Symphoricarpos oreophilus*)

Squaw apple (*Peraphyllum ramosissimum*)

Sumac, skunkbush (*Rhus trilobata*)

Tea, Mormon (*Ephedra viridis*)

Willow (*Salix* spp.)

Winterfat *(Krascheninnikovia lanata)*

## FINDING OF NO SIGNIFICANT IMPACTS/DECISION RECORD

The Vale District of the Bureau of Land Management (BLM) has prepared an Environmental Assessment (EA) Document (OR-030-2005-005) for normal Emergency Stabilization and Rehabilitation (ESR) Treatments that may be employed on the Vale District following wildfire events. The EA is a programmatic document that was developed for the Vale District, and contains a description of a range of ESR treatments that may be implemented following a wildland fire and documentation of potential treatment impacts. The EA anticipates typical post-fire conditions and would be used to develop site-specific ESR plans. The attached Environmental Assessment (EA 030-2005-05) contains a detailed description and analysis of the proposed action alternative and a no action alternative. This EA was prepared under the guidance provided by the Southeastern Oregon Resource Management Plan (SEORMP) (2002) and the Baker Resource Management Plan (BRMP) (1989).

The "context" of the analysis is stepped down from the Interior Columbia Basin Ecosystem Management Project (ICBEMP) Science Findings (broad scale, regional analysis covering eastern Oregon, southern Idaho, northern Nevada, northern Utah, and western Montana), through the SEORMP/BRMP (mid scale analysis addressing land use) and ending with this EA. The preferred alternative, as described, would have little if any effect on the human environment at the national level or beyond. None of the actions contemplated are irreversible and the only irretrievable commitments are in the funding and associated materials necessary to implement the proposed action.

The "intensity" of impacts, beneficial and adverse, is thoroughly described in the Environmental Impacts section of the EA. Intensity is a component of "significance" and is determined by applying ten criteria (see CEQ regulations Sec. 1508.27). In review of these criteria, relative to the preferred alternative III, I have found:

Beneficial and adverse effects - Though on balance the cumulative effects are positive, there would be no significant effects (positive or negative) relative to the CEQ definition. Cultural resources and special status species would be protected.

Public health or safety - There would be no significant effects on public health or safety.

Unique areas and unknown risks – There would be no significant impacts to unique areas, there are no highly uncertain, unique or unknown risks, and the project does not set a precedent for future actions that could have significant effects. The SEORMP/BRMP and this EA cover the anticipated impacts thoroughly.

Highly Controversial Effects - Any effects on the human environment which are related to "land use" allocation issues were addressed and decided in the SEORMP/BRMP and the subsequent Record of Decisions and are outside the scope of this EA.

Precedent for future actions- There are no precedents, relative to future actions with significant effects, which would be established. The specific actions involved in the

proposed action have all been done before.

Cumulative Effects - The impacts of proposed actions have been analyzed and considered, separately and cumulatively, at multiple scales of analysis by considering ICBEMP science findings, SEORMP/BRMP, and this EA. Impacts are either not significant, are mitigated below significance, or were declared and addressed in the SEORMP/BRMP. The cumulative effect of implementation of the preferred alternative is also not significant and is within the scope of the cumulative effects analysis disclosed in the SEORMP/BRMP.

Impacts to significant scientific, cultural, or historical resources - There will be no impacts to sites that could be listed on the National Register of Historic Places, no scientific, cultural or historic resources will be lost.

Federally listed endangered or threatened species - There will be no impacts to any species listed under the Endangered Species Act.

Compliance with Federal, State, or local law - The preferred alternative is in compliance with federal, state, and local law and requirements relative to environmental protection. Further, it is in conformance with the SEORMP/BRMP.

This Finding of No Significant Impact and Decision Record documents my decision to select the proposed action described in EA OR-030-2005-005 for normal Emergency Stabilization and Rehabilitation (ESR) Treatments that may be employed on the Vale District following wildfire events. Implementation of the proposed action will streamline the Emergency Stabilization and/or Rehabilitation plans, actions, and procedures to facilitate orderly and timely on-the-ground treatments that are consistent with the urgent need for wildland fire emergency stabilization and rehabilitation treatments. I have determined, based upon the analysis of environmental impacts contained in the referenced EA, and what is written above, that the potential impacts raised by the proposed action will not be significant and that preparation of an environmental impact statement is not required.

David R Henderson — 7/12/05

Authorized Official — Date